. . Index to Contents, May, 1940 . .

The Annual Index to Contents appears at the back of the December issue each year

Airports and Aviation
Special CAA Equipment for Airports 13
Zoning for Buildings Near Airports 13
Automatic Beacon for LaGuardia Field 13
4,500-Foot Runway for Des Moines Airport 39

Building Codes
The Pittsburgh Welding Code 63

Buildings, Public
Liberty's New Municipal Building 87

Business and Industrial Development
Pulling Business by Free Parking 87
Baltimore's Tourist Bureau Program 87

Business Machines
Stratford Collects 80%, Old Arrears 51
Automatic High-Speed Whiteprint Machine 121

City Manager Plan
The City Manager Plan Will Endure 35
City Manager Appointments 91

Civic-Commercial Organizations
Baltimore's Tourist Bureau Program 87
The Redbuds of Wichita 87

Conventions
Conventions—When and Where 119

Drainage
New Drainage Pumps, California District. 131

Engineering
Engineering Lettering Made Uniformly Neat 125

Finance and Taxation
Burdens and Benefits of Taxation 5
Better Collections—Smaller Debt 7
Government Money for a Stronger Nation 43
Stratford Collects 80%, Old Arrears 51
A Graphic Presentation of City Finances 52
I Like to Pay Taxes 53
Tax Delinquency at New Low for 1939 105
The Municipal Bond Market 107

Fire Prevention and Control
Fire Insurance Program for Modern Man 15
Fire Doings at Atlantic City 15
New Fire Station, Mason City 91
$3.71 Per Capita for Fire Protection 107

Forward Steps
Items Contributed by Officials and Others 87

Government and Administration
Names and Numbers 7
The City Manager Plan Will Endure 35
Many Improvements Aid Morganton, N. C. 58

Health and Sanitation
Warning to Pork Eaters and Hog Growers 11
City Health Conservation Winners 59
Six Cities Cooperate on Milk Inspection 105

Housing
Urban Land Institute to Combat Urban Blight and Decentralization 38
Government Money for a Stronger Nation 43
Neighborhood Conservation in Chicago 64
National Chamber's Housing Program 73
Housing Exhibit Held in Public Library. 73

Legal Decisions
Zoning and Planning Notes 109
Municipal Law Notes and Decisions 111

Lighting, Outdoor
Records of Street-Lighting Experience 99
Only $2.06 Per Capita for Greensburg 99
Highway Traffic Safety Lighting, Ala. 101
Street Lighting Costs a Dollar Per Capita in Bozeman, Mont. 101
Expects to Install a Million Lumens 101
General Relighting in Jackson, Mich. 103
Fort Collins' Total Costs 103
More Light Wanted on Buffalo Streets 103
Holds Luminaire Alignment 103

Motor Equipment
A New Hand Broom for Street Sweepers. 121
Diesel Tractor of 79-Hp at Drawbar 123
Concrete Mixer Catalogs Available 125
New Windlass Truck for Sewer Cleaning. 127
New Patching Roller Has Many Uses 129
Power Lawn Mowers for Large Areas 133

News and Illustrations
Hints for Officials 121

Nuisances
May All Our Enemies Be Little Ones 7
Smoke Ordinance Adopted, St. Louis 105

Parks and Recreation
When You See Those Trees at the New York World's Fair 66
Where the "Garden of a Million Tulips" Was to Be 70
Meters for Hotplates in City Parks 125
Power Lawn Mowers for Large Areas 133

Planning and Zoning
Zoning for Buildings Near Airports 13
Urban Land Institute to Combat Urban Blight and Decentralization 38
Summer Planning Program 50
Neighborhood Conservation in Chicago 64
Planning Your Community 65
An Old New England Town Migrates 75
Plan for Lower Mall, Cleveland 89
Zoning and Planning Notes 109

Police
New Era Police 7
Police Organize 330 Boys and Girls 15
Broadcasting Photo Circular Finds Murderer 55
Thumb-Prints of Pawnbrokers' Customers Aid Police 107

Power Plants
Diesel Dividends 7
Chattanooga's Municipal Power 71

Public Works
Many Improvements Aid Morgantown, N. C. 58

Publications
Municipal and Civic Publications 113

Radio
New-Era Police 7

Roadside Improvement
The Billboard—A Blot on Nature 62

Sewers and Sewage Treatment
Sewage-Treatment Plant for Mason, Mich. 46
Screens, Grit and Sludge Units for Small Plants 123
New Windlass Truck for Sewer Cleaning. 127
Small Distributors for Sewage Filters 133

Street Cleaning
Street Cleaning Financed by Municipal Light Plant 69
A New Hand Broom for Street Sweepers. 121
A Curb Inlet That Is Self-Cleaning 121

Street Construction and Maintenance
Boulevard Building 56
Street Paving with Crushed Brick Concrete 68
Diesel Tractor of 79-Hp at Drawbar 123
Concrete Mixer Catalogs Available 125
New Patching Roller Has Many Uses 129

Street Naming and Numbering
Names and Numbers 7

Swimming Pools
The Best Pool Promoter 15

Traffic Control and Facilitation
Pulling Business by Free Parking 87
Is Pedestrian Safety Merely Conversation? 93
What Do Traffic Signals Mean? 95
Economical Use of Streets by Public Carriers 97
Portable Spray Unit Traffic Line Marker. 123

Transportation
Carries the Occupants of 25 Automobiles 15
Economical Use of Streets by Public Carriers 97

Trees, Street
When You See Those Trees at the World's Fair 66
The Redbuds of Wichita 87

Waste Collection and Disposal
Warning to Pork Eaters and Hog Growers 11
Daily Refuse Wastes in American Cities 11
New Railroad Yard on Burning Dump 11
"It's Waste to Waste Waste" 42
Refuse Incineration, Minneapolis, Minn. 49

Waterfronts
Plan for Lower Mall, Cleveland 89

Water Supply and Water Works
Annual Growth in Use of Water Meters 9
Hazards Created by Water Shut-Offs 9
A Quarter-Century of Watershed Plantings 9
A New Water System 37
Water Softening 44
Water Rates and Service Charges—V 79
Two-Stage Pumps for Higher Heads 127
Horizontal Drilling for Water Services 127
Fun-House a Feature of AWWA Exhibits. 127
New Boring Machine for Service Pipes 129

VOL. LV MAY
No. 5 1940

The American City

Issued Monthly by the
American City Magazine Corporation
470 Fourth Ave., New York
EDGAR J. BUTTENHEIM, President
HAROLD S. BUTTENHEIM, Editor
THEODORE REED KENDALL
Secretary and Engineering Editor
M. V. FULLER, Associate Editor
ALDEN W. WELCH, Research Editor
HERBERT K. SAXE
Treasurer
MYRON MacLEOD, Advertising Mgr.
PRENTICE C. FORD, Asst. to President

BRANCH OFFICES
Daily News Building, Chicago
GEORGE S. CONOVER, Vice-President
Mills Building, San Francisco
DUNCAN A. SCOTT, Representative

Subscription, $2 per annum in United States and Canada ($3 to foreign countries)
Single copies, 35c
Back numbers, 50c
Entered as second-class matter, July 29, 1910, at the Post Office at New York, N. Y., under Act of March 3, 1879.
Printed in U. S. A.

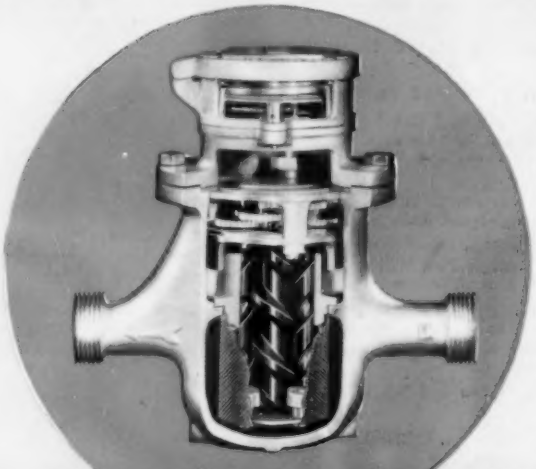
In THE MUNICIPAL INDEX AND ATLAS (the annual reference volume of data and condensed catalogs published by the American City Magazine Corporation) readers will find statistical material, and articles on a wide variety of municipal and public works subjects, not published in the monthly issues of the magazine.

See pp. 17, 18, 20, 113, 115, 117 for catalogs and publications on municipal and civic subjects

For Index to Advertisements see page 138

To GET ALL 4

BUY THIS ONE



The PITTSBURGH IMO METER

❶ LOW FLOW ACCURACY

PITTSBURGH IMO METERS MEASURE THE LOW FLOWS that either escape measurement entirely or are only partially recorded by conventional meters. Factory specifications guarantee accuracy of 98% at 1/4 g. p. m., 90% at 1/12 g. p. m.; the most stringent accuracy test ever applied to new meters.

❷ SUSTAINED ACCURACY

THE INITIAL ACCURACY OF PITTSBURGH IMO METERS IS SUSTAINED ACCURACY. Numerous tests show that even after several million gallons have been measured, Pittsburgh IMO Meters measure slightly better on the low flows than when first put into service and that their accuracy does not change at rates of flow above 1 g.p.m.

❸ SILENT OPERATION

THE BASIC CONSTRUCTION OF THE PITTSBURGH IMO is responsible for its quiet operation. Smoothly turning rotors, precision cut to mesh perfectly, revolve with a semi-floating action as the water flows through the measuring chamber in a straight line. For this reason the IMO can never become noisy; there can be no clicking sound to annoy your consumers.

❹ LOW MAINTENANCE COST

PITTSBURGH IMO METERS COST LESS TO MAINTAIN. The unique design of the measuring chamber and its semi-floating rotors increases the life of the working parts as compared to conventional meters and insures longer trouble-free service.

"To get all four, buy this one"—that's exactly why more and more waterworks men are switching to the PITTSBURGH IMO. In fact, within the short period of two years, thousands of IMO Meters have been put in service in over 1200 waterworks systems. No other meter has ever been given such wide public acceptance so quickly.

Although this acceptance came with unprecedented rapidity, it was not given until after IMO Meters had been put through hundreds of the most rigid and severe tests by waterworks men. The absolute satisfaction that the PITTSBURGH IMO METER is giving is best expressed by the tributes paid to it in the many letters received from users that substantiate any and all of the claims that have been made.

Do you know the complete story of the PITTSBURGH IMO—the most accurate water meter ever commercially built? Bulletin W-529 tells it, and will be sent upon request.

Remember— PITTSBURGH IMO METERS WEAR IN WHERE OTHERS WEAR OUT

PITTSBURGH EQUITABLE METER COMPANY
MERCO NORDSTROM VALVE CO.
NEW YORK · BUFFALO · PHILADELPHIA · DES MOINES · CHICAGO · COLUMBIA
KANSAS CITY · TULSA · LOS ANGELES *Main Offices* PITTSBURGH, PA. MEMPHIS · OAKLAND · HOUSTON

Thousands of IMO Meters Are Now in Service — Over ~~1100~~ 1200 Water Works Systems Have Adopted Them

Burdens and Benefits of Taxation

The American taxpayer contributes more than $12,000,000,000 *yearly to over* 160,000 *taxing units.*

Taxes We Pay
Services We Get

UNDER this heading *The New York Times* published in its Sunday Magazine section of April 14 an article by Mildred Adams with drawings by Sally Michel, here reproduced by permission of the artist.

Discussing the very large number of different taxing units in the country, Miss Adams said:

"Not all of them touch all of us—it only seems that way. Together they collect $12,500,000,000 yearly from us, our businesses, amusements, institutions. That amounts roughly to $100 apiece; but of course it does not work out so neatly. Some pay less, some more, but no one entirely escapes.

"That sum amounts to a fifth of our national pay check. Once in the local, state and national treasuries, it goes out again for street paving, bridge building, army upkeep, and printing the speeches of Senators. In the process it buys materials and pays wages for making those materials and putting them to work. Thus by a kind of economic legerdemain, having been taken out of the national pay check, it becomes part of the national income, and the same part—one-fifth."

In addition to estimating the share of the tax burden paid by a $5,000-a-year New Yorker, Miss Adams tells of some of his tax benefits. For example:

"He rises at 7:30, shaves and bathes with water provided by the city water system. When he pulls the stopper, the water disappears through the city sewer. In his coffee he drinks pasteurized cream that the state has inspected and passed as free from disease. As he goes out of his front door, the mailman, paid in part by his Federal taxes, is delivering the mail.

"He walks to the subway over pavements that his hidden local taxes pay for, and at the busiest corner he nods to the traffic cop whose salary he partly pays. He takes the city-built subway to the office, riding for a nickel because some of his hidden tax money goes toward making up the real cost. He goes up to the twentieth floor in the city-inspected elevator.

"As he reaches his desk, his children are launched in the first recitation of the morning at their public school. In the middle of a conference he calls the Public Library for an important detail that no one can find in the reference books in his office, and at noon he eats a lunch the cleanliness of which is in part, at least, assured by municipal inspection."

New Tax-Yield Statistics

According to a compilation of tax-yield statistics released May 6, 1940, by the Tax Policy League, total tax collections in the United States for the fiscal year 1939 amounted to $13,794,718,327. Excluding payroll taxes, the total was $12,253,574,327. Thus Miss Adams' estimate in *The New York Times'* article was very close to the Tax Policy League figures which have since become available. Omitting the payroll taxes, the revenues in order of fiscal importance as shown in the League study, were:

Tax	Federal	State	Local	Total	Percentage
Property		$190,172,747	$4,175,416,363	$4,365,589,110	35.6
Income	$2,178,420,000	352,056,924		2,530,476,924	20.6
Gasoline	207,019,000	800,089,161	4,353,526	1,011,461,687	8.3
Alcoholic Beverage	587,606,000	212,063,844	3,316,130	802,973,974	6.6
Tobacco	579,784,000	58,004,115	5,156,585	642,946,700	5.2
General Sales	62,669,000	440,035,949	68,003,568	570,708,517	4.7
Estate, etc.	360,716,000	132,031,931	430,641	493,178,572	4.0
Motor Vehicle	91,485,000	384,240,415	1,788,178	477,513,593	3.9
Customs	318,837,000			318,837,000	2.6
Other	387,776,000	489,835,136	192,277,114	1,069,888,250	8.6
Total	$4,744,311,000	$3,058,820,222	$4,460,743,105	$12,253,874,327	100.0

See also "I Like to Pay Taxes," on pages 33-35, of this issue.

The government collects in cash, but the taxpayer collects in the form of government services.

45,000 GALLONS DAILY

For the Cost of 3 Packs of Cigarettes

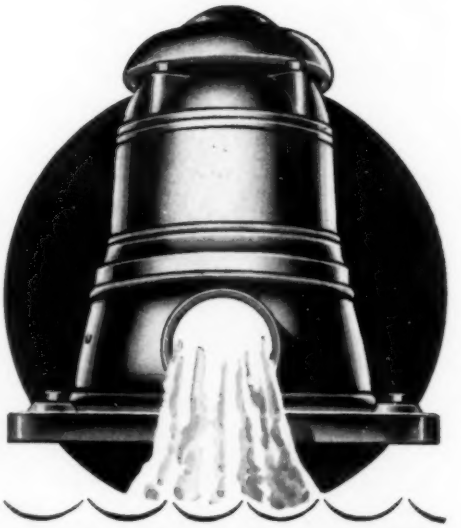
Forty-eight miles south of Memphis, for the Illinois Central System, a Layne Well Water System is pumping 45,000 gallons of water daily for the equivalent cost of three packs of cigarettes. Three years of continuous operation has brought no shut down for repairs; no expense of upkeep. This is typical of low cost operation and efficiency of Layne Well Water Systems.

Other Layne installations are providing up to 20,000,000 gallons of water daily at an even lower gallonage cost. Such performance is evident proof that years of experience and highest skill have combined to produce wells and pumps of outstanding quality and efficiency.

Layne Well Water Systems are in use in all parts of the world. They are available in sizes to provide from a few thousand to many millions of gallons daily.

Any City, Factory, Paper Mill, Oil Industry, Railroad, Irrigation or business official may secure a complete file of bulletins, catalogs and folders on Layne Well Water Systems, without obligation, by addressing

LAYNE & BOWLER, INC.
Dept. B, Memphis, Tenn.



AFFILIATED COMPANIES

LAYNE-ARKANSAS CO. . STUTTGART, ARK.
LAYNE-ATLANTIC CO. . . . NORFOLK, VA.
LAYNE-CENTRAL CO. . . MEMPHIS, TENN.
LAYNE-NORTHERN CO. . MISHAWAKA, IND.
LAYNE-LOUISIANA CO. LAKE CHARLES, LA.
LAYNE-NEW YORK CO. . NEW YORK CITY.
AND PITTSBURGH . . . . . PA.
LAYNE-NORTHWEST CO. MILWAUKEE, WIS.
LAYNE-OHIO CO. . . . COLUMBUS, OHIO
LAYNE-TEXAS CO. . . . . HOUSTON AND
DALLAS . . . . . TEXAS.
LAYNE-WESTERN CO. . KANSAS CITY, MO.
CHICAGO, ILL. . . . OMAHA, NEBRASKA
LAYNE-WESTERN CO. OF MINNESOTA
MINNEAPOLIS . . . . . MINN.
LAYNE-BOWLER NEW ENGLAND COMPANY.
BOSTON . . . . . MASSACHUSETTS.
INTERNATIONAL WATER SUPPLY, LTD.,
LONDON . . . . . ONTARIO, CANADA

LAYNE

PUMPS & WELL WATER SYSTEMS

FOR MUNICIPALITIES • INDUSTRIES • RAILROADS • MINES AND IRRIGATION

Our Municipal Notebook

Better Collections—Smaller Debt

THE COUNTY OF ERIE, N. Y., which includes Buffalo, points with pride to a remarkable improvement in tax collections. In the city of Buffalo only, the county collected in 1939 current and delinquent taxes aggregating 95.9 per cent of that year's tax levy, compared with 95.3 per cent in 1936 and 92.1 per cent in 1933.

In the cities and towns outside of Buffalo, collections amounted to 81.9 per cent in 1939, compared with 73.1 per cent in 1936 and 59.8 in 1933.

For the entire county, the collections percentages were 89.8, 84.5 and 76.1 for the three years 1939, 1936 and 1933. Total taxes have increased $2,000,000 since 1933.

County Treasurer Charles Ulrich points also to a reduction of more than $10,000,000 in bonded debt.

One of the first principles in achieving larger collections is to have a complete and accurate listing of arrears. Erie County's list extends back to 1860. $13.60 is still owed on that year's taxes. An increasing number of cities recognize that an accurate "trial balance of delinquent taxes" is the starting point of a modern tax-accounting and billing system.

Says Deputy County Treasurer Edwin J. Kreinheder:

"We believe that the increased tax collections of the county tax in the city of Buffalo are principally due to the fact that a great many properties are taken over annually by the bank and also by the Home Owners' Loan Corporation which is paying the taxes when due. We understand that the HOLC is extending its mortgages, thereby reducing the monthly payments to be made to it by the owner and that it is also entering into an agreement which it calls a Tax and Insurance Agreement by which the home owner pays his taxes and insurance in monthly payments, the Corporation, however, advancing the money at time taxes are payable.

"The percentage of tax collections in the towns, we believe, is improving due to two main factors. The one is that a great many Buffalo people are moving into the adjacent suburbs, and that there is considerable building especially in the towns of Tonawanda, Amherst, and Cheektowaga. The second reason is the fact that the county has been foreclosing a great deal of subdivision property, which then naturally becomes tax-exempt."

Names and Numbers

Though fog or night the scene encumbers,
Why don't all buildings show their numbers
On lintel, wall or door?
Why can't a house say good and plenty,
"Hey, look at me! I'm Ninteen-twenty,
The joint you're looking for!"
Why can't our thoroughfares, our highways,
Our squares, our streets, our parks, our byways,
Have signs where all can see?
"I'm Lincoln Place." "I'm Pershing Corner."
"I'm Avenue Ignatius-Horner."
"I'm Boulevard Legree."
But what appears the very oddest
Is that our towns are all so modest
And loth to urge their claim.
Why not proclaim whenas we enter
"Podunk, the World's Great Peanut Center"?
Why don't they tell their names?
So, dwellings, mansions, roadways, alleys,
As well as rivers, mountains, valleys
And hamlets near and far
Throughout this self-effacing nation,
We really want the information;
Please tell us who you are!

ARTHUR GUITERMAN.

—Published by permission of the author and of the *New York Herald-Tribune*.

May All Our Enemies Be Little Ones

THESE ARE ROMAN CANDLES wielded by the firemen and police of Oklahoma City to drive out and away the starlings of the business district. The

attack was not entirely successful, says Fire Chief G. R. McAlpine, for though the birds evacuated to quieter sectors, many of them returned when the shooting was over. At the extreme left may be seen a Dual of the pioneer installation of parking meters.

Diesel Dividends

A MODERN MUNICIPAL POWER PLANT is a city employee that pays a big salary to the city. In Wilson, Kans., for example, population 1,100, the tax rate has been slashed, current is free to the municipal services, and the plant has a $10,000 annual surplus. Garland, Texas, is another case, soon to be described in these pages.

New-Era Police

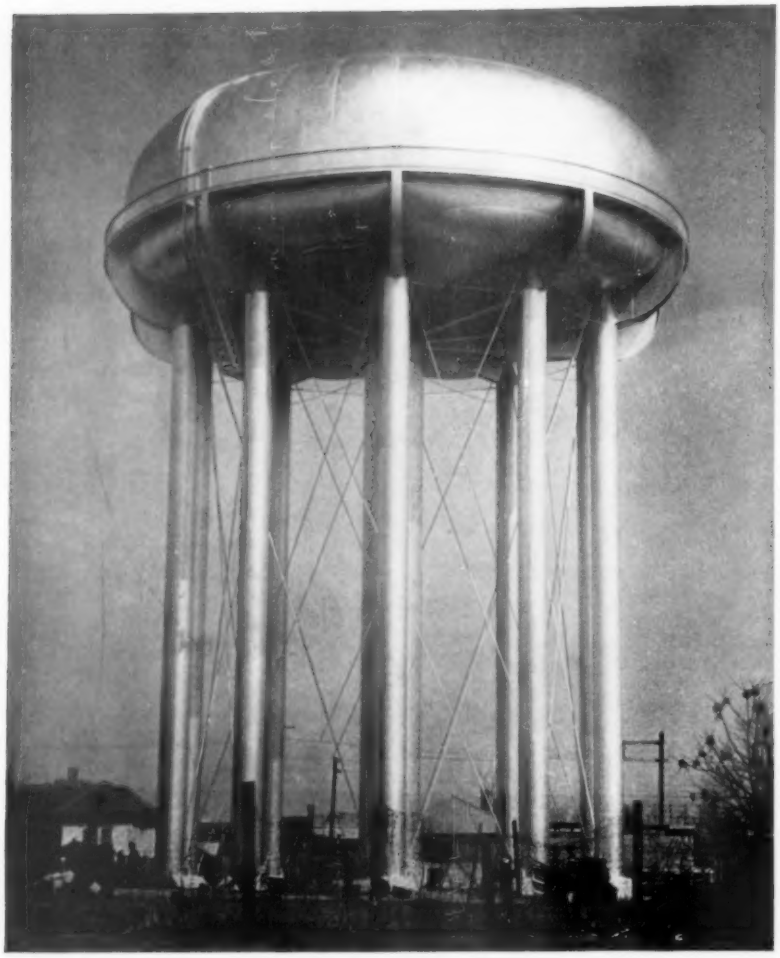
RADIO IS TURNING an increasing number of police departments inside out, placing the full shift, including reserves, on the street where things happen, instead of furnishing housing in the outmoded precinct stations whose very existence the people are forgetting.

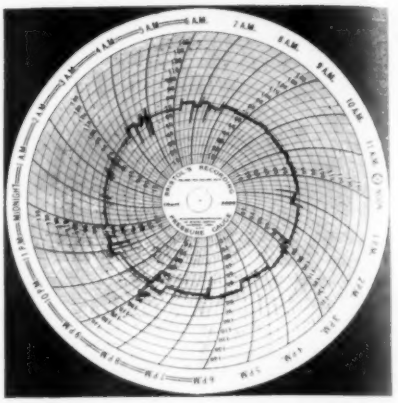
THE MUNICIPAL INDEX 1940 will describe and discuss these new-era police, using as a springboard the largest and most complete two-way police radio system in the world. That the rest of the Cleveland organization is in keeping with its Field Marshal Radio is evidenced by—

- A 14% decrease in crime in 1938
- A 17% decrease in crime in 1939
- A 19-30% decrease in automobile insurance rates for bodily injury in 1938
- A 20-25% decrease in automobile insurance rates for bodily injury in 1939

Whether dozens or hundreds of other cities will show similar results remains to be seen. The police departments are on wheels, with their ears on headquarters and their eyes ahead, and, as Superintendent Charles A. Wheeler of Bridgeport says: "If politics are kept out, any police chief can show results." Everyone knows that there is no final answer in police work. In Cleveland, even while 100 talk-back cars flitted throughout the city and its suburbs, reducing automobile fatalities, shootings, robberies, pocket picking and automobile stealing, there were *increases* in attempted burglary and larceny. Near the Loop in Chicago, five masked men held up and robbed two movie stars in their car on the way to their hotel after a charity performance. The *New York Herald Tribune* points to the new night aspect of the city, where although policemen may be omnipresent in automobiles, they are no longer a familiar visible solace. The psychological strength of the foot patrolman must not be overlooked.

Pressure Charts Again Prove Value of Modern ELEVATED STORAGE

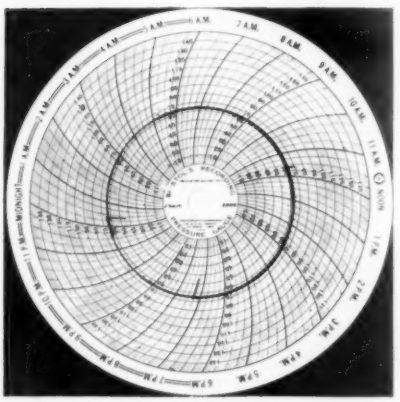




BEFORE: *The above chart shows the pressure in the Dothan water system on February 5, 1939—before the new tank was in service.*

● ● ●

AFTER: *The chart below shows the pressure in the water system on August 15, 1939—after the 750,000-gal. tank was placed in service.*



At DOTHAN, ALABAMA The City of Dothan, Ala., recently installed the 750,000-gal. radial-cone bottom tank shown above in its water system. This attractive new tank makes it possible for the city to pump a great deal of its daily water requirements during off-peak periods, thereby saving a part of the demand charge for electric power.

At Dothan, the requirements of cotton gin and oil mill operation throw a heavy demand on the municipally-operated power distribution system during the Fall months. With the elevated tank in service it is possible to keep the pumps shut down during the day and do all pumping at night. This will hold down the maximum 15-min. demand to about 125 kilowatts, saving $185. per mo. for three months in the Fall and a proportionate amount for the remaining months. This figure indicates a total saving in power of about $1,500 per year.

In addition, the new tank maintains a uniform pressure in the distribution system as shown on the above charts. Note how the irregularities in the top chart, made before the tank was in service, are completely smoothed out in the lower chart, which shows the pressure with the tank in service.

The story told by the two pressure charts at Dothan is a typical example of the advantages being secured by municipalities that utilize modern elevated storage. We shall be glad to submit, without obligation, complete information or estimating data on Horton elevated tanks to meet your requirements. Please address our nearest office.

CHICAGO BRIDGE & IRON COMPANY

Chicago.....2127 McCormick Bldg.	Philadelphia....1616-1700 Walnut St.	San Francisco.....1033 Rialto Bldg.
New York..3308-165 Broadway Bldg.	Boston...1501 Consolidated Gas Bldg.	Houston.....2919 Main Street
Cleveland....2236 Rockefeller Bldg.	Birmingham....1502 N. Fiftieth Street	Tulsa.....1625 Hunt Bldg.
Detroit.....1501 Lafayette Bldg.	Dallas.....1406 Liberty Bank Bldg.	Los Angeles.....1403 Wm. Fox Bldg.

Plants at BIRMINGHAM, CHICAGO, and GREENVILLE, PA.
In Canada: HORTON STEEL WORKS, LIMITED, FORT ERIE, ONTARIO

During May we hope you will remember to mention THE AMERICAN CITY.

Water-Works Operation

Annual Growth in Use of Water Meters

THE MOST RECENT ANNUAL REPORT of the city of Pasadena, Calif., shows in a very interesting manner the annual growth in the use of meters in that city. As of November 1, 1912, there were 12,571 services, of which 8,316 were metered. By June 30, 1915, there were 14,851 services, of which 11,601 were metered. Then, successively, the figures for total services and meter services were: June 30, 1920—16,136 and 13,026; June 30, 1925— 24,919 and 21,801; June 30, 1930—31,391 and 25,687; June 30, 1934—31,298 and 25,510; June 30, 1935—31,425 and 25,611; June 30, 1936—31,494 and 25,974; June 30, 1937—32,543 and 27,006; June 20, 1938—32,889 and 27,502; June 30, 1939—33,100 and 27,768.

Of the domestic meters in service June 30, 1939, 21,504 were ⅝-inch, 729 were ¾-inch, 4,546 were 1-inch, 471 were 1½-inch, 491 were 2-inch, 9 were 3-inch, 15 were 4-inch, and 2 were 6-inch. In addition there were 84 irrigation meters in service in the system.

Hazards Created by Water Shut-Offs

NUMEROUS HAZARDS ARE CAUSED when water is turned off to permit new connections to be made to the system or to repair a broken main. It is the practice of all well-operated water systems to notify all consumers before turning off the water, telling them approximately how long the shut-down will be effective, and giving each one an opportunity to draw sufficient water to meet his needs during the shut-down period. All men employed on this type of work should be qualified to advise the housewife regarding the operation of the furnace or hot water heater, to caution her not to draw the water out of the hot-water boiler but to relieve the steam pressure which might build up, by occasionally opening the hot-water faucet upstairs.

Carl A. Hechmer, Department Engineer, Washington Suburban Sanitary District, Hyattsville, Md., in a paper read before the Maryland-Delaware Water and Sewerage Association, discussed a complaint which claimed damage due to personal injury, and the question as to the legal claim of the water consumer for damage caused by an accident when the water service was resumed after a shut-down. One attorney gave the opinion that a second notification should have been made prior to turning on the water. The details of the accident are as follows:

Repairs to the water system near a lunchroom necessitated shutting down the water service for two hours, and the counterman in charge of the lunchroom was notified before the valves were closed. When the repair was completed, the repair foreman turned the water service back into the main, taking all precautions to remove air through a fire hydrant, and charging at a low rate of flow. A short time after service was restored, the foreman was advised that the counterman in charge had been badly burned by the explosion of a coffee urn, and soon an ambulance arrived and removed the injured man to a hospital, badly burned about the upper part of his body with scalding water. Investigation disclosed that the urn was a three-compartment affair, two for coffee, and the third, incasing the other two, for hot water, forming a reservoir for hot-water storage and a heating jacket to keep the coffee hot. Water is drawn from the hot-water compartment from a faucet into measuring cans, and poured by the attendant into the top of the coffee compartments. The water supply in the hot-water compartment is replenished through a direct pipe connection to the water system, controlled by a spring-operated level valve which must be held in the open position by the attendant. The counterman claims that when the water service was restored and was available in other parts of the lunchroom, he opened the valve to fill the hot-water compartment, but that air under great pressure rushed into the urn, causing the hot water therein to be blown out of the top and over him. It is possible that practically all the hot water had been used during the shut-down, exposing the heating coils to the gas burners, and that when cold water was turned in, steam was formed, causing the explosion. The claim for damage and injuries has not been settled.

A Quarter-Century of Watershed Planting

PLANTINGS OF TREES on the uplands surrounding Oradell Lake, largest of the storage reservoirs of the Hackensack Water Co., in northern New Jersey, began nearly a quarter of a century ago, transforming it into what has now become one of the most scenic areas in the New York-New Jersey metropolitan district. The plan originated with the late Robert W. de Forest, President of the Hackensack Water Co. from 1885 to 1931. Mr. de Forest foresaw, while Oradell reservoir was being built, the community value which would arise from scientific reforestation of a region which had been disfigured by the construction operations accompanying the expansion of Bergen County's water supply.

"While added years of growth will enhance the beauty of the scene, this extensive body of water and its surroundings now represent the consummation of Mr. de Forest's vision of a natural lake of clean water, surrounded by quiet, sylvan beauty and forest, largely pine," states the report of Olmsted Bros. of Brookline, Mass., under whose direction the plantings were started and developed. The present scene, the report points out, is in startling contrast to "the appalling upheaval, destruction, disorder and offensiveness which was an inevitable accompaniment during the construction of the reservoir."

In an exhaustive discussion of the origin and development of the Oradell Grove, the report outlines recommendations for the maintenance of the area, including the introduction of new kinds of trees and shrubs. "The shore plantings of pines are in thriving condition. Although some years are still required to produce the mature result desired, the woodland effect has already been brought to the water's edge, and the distressingly raw banks have been practically obliterated.

"While in general the trees should and do come to the water's edge, there are several stretches where a grassy open area, backed by woodlands, replaces trees. These add scenic variety and should be retained. Thinning of the pine plantings has been carried out with excellent results in many places."

Most of the forest areas around Oradell reservoir, the report states, should be of the closewood type; that is, the trees should be spaced closely, both because that type is esthetically the most suitable and because its upkeep is more practicable and straightforward than that of any other type. The Oradell forest areas embrace several hundred acres. They abound in native deciduous trees, including oak, maple, sycamore, beech, ash, dogwood and hickory, as well as in planted evergreens, including white, red, jack and Austrian pine, hemlock and Norway spruce.

Now!

PREMIUM QUALITY AND PERFORMANCE

at no premium in price!

OUT of Goodyear's vast development laboratories have come two great new truck tires—thoroughbred companions in rubber — designed and built to give you low-cost mileage. They are the new Goodyear HI-MILER Rib and the HI-MILER All-Weather!

No less than *four* outstanding Goodyear improvements give these HI-MILERS their extraordinary stamina —greater resistance to heat and wear, to cutting, chipping, cracking. The result is—long, trouble-free mileage! How well HI-MILER deserves the name is proved by this tested fact:

In any normal trucking service *these new* HI-MILERS *will deliver mileage for you comparable to premium-priced truck tires*—yet you pay no premium for them!

For your general on-the-road work, where long, slow even wear is the major consideration, the HI-MILER Rib is a star performer. For road conditions where it is essential to have *extra traction* in addition to uniform wear and long mileage, the HI-MILER All-Weather delivers the goods for you! *Both* will save you money, whether you operate one truck or a whole fleet!

Get premium performance, premium mileage, at no extra cost, by putting on HI-MILERS today—either Rib or All-Weather tread depending on your traction needs. Either will prove to you this truth: *Goodyear tires are as good as you think, and cost far less than you imagine!*

Hi-Miler, All-Weather, Supertwist—T. M.'s The Goodyear Tire & Rubber Company

No other truck tires offer you all these improvements

1. Tread thickness increased 12% to 15%

2. Highest practical percentage of tread rubber in load-carrying area

3. Multiple compounding insuring maximum bond between tread and carcass

4. Low stretch Supertwist cord providing greater resistance to heat and fatigue

THE GREATEST NAME IN RUBBER

GOODYEAR

MORE TONS ARE HAULED ON GOODYEAR TRUCK TIRES THAN ON ANY OTHER KIND

Why not remember to mention THE AMERICAN CITY?

Refuse Collection and Disposal

Warning to Pork Eaters and Hog Growers

TRICHINOSIS is a disease which receives scant attention, aside from an occasional scare headline from the press and the general public; yet the United States Public Health Service considers it a major public health problem. Trichinosis, though seldom fatal, is an extremely painful malady, and indications are that it is far more prevalent than is generally believed. It is estimated that one adult in ten suffers at some time from it.

Practically no progress has been made during the last fifty years in the control of trichinosis. It is extremely hard to diagnose, because its symptoms may be confused with some fifty other diseases. No effective treatment is known, so once the disease is contracted there is nothing to do but let it run its course. Trichinosis can be prevented, however. It is contracted solely by eating raw or undercooked pork infested with parasites called trichinae. Occasional cases have been tentatively traced to bear meat and other meat, but these are rare. From an individual standpoint, trichinosis can be prevented by thoroughly cooking all pork. From a public health standpoint the problem is not so simple. Past experience has proved that repeated warnings not to eat undercooked pork are rather generally disregarded. Hence, the only way the disease can be controlled is by preventing hogs from becoming infested with trichinae or by processing all pork so as to render this parasite harmless.

In view of the shortcomings of other control measures, the United States Public Health Service advocates measures to prevent hogs from becoming infested with trichinae. It has been proved that practically the only way hogs contract trichinae is by eating garbage containing uncooked or undercooked pork scraps. Garbage-fed hogs have been found to be infested with trichinae three to five times as often as those raised on grain, and human trichinosis has been found to be many times more prevalent in areas where hogs are customarily raised on garbage than in those where grain feeding is customary.

The United States Public Health Service characterizes the garbage-feeding industry, as ordinarily carried on, as "dangerous to the health of man and livestock, esthetically objectionable, and often economically unsound." Hog raising is not a well-organized industry, and direct government control of the feeding practices of thousands of individual hog raisers would be virtually impossible. Consequently, the United States Public Health Service suggests approaching the problem indirectly through the meat-packing industry, which is well-organized and in a position to demand and see to it that the hogs it buys are so raised that the danger of trichinosis is at a minimum.

The widespread practice of municipalities of selling or giving garbage to farmers to be fed uncooked to hogs is dangerous and should be abolished, according to the U. S. Public Health Service. The latest comprehensive report of garbage-disposal methods of American cities, covering 582 cities of more than 4,500 population, issued in 1931 by the U. S. Chamber of Commerce, showed that more cities disposed of their garbage by hog-feeding than by any other method. A total of 218 cities fed their garbage to hogs, 186 dumped it on land outside the city, 126 operated incinerators, 34 buried it, 14 operated reduction plants to reclaim valuable grease, and 1 operated a fermentation plant.

REFUSE COLLECTION IN AMERICAN CITIES

	Low	High	Average	No. Cities
All refuse together	572 lbs.	1,488 lbs.	710 lbs.	16
Garbage (collected separately)	66 "	526 "	234 "	47
Rubbish (collected separately)	166 "	532 "	326 "	11
Ashes (collected separately)	362 "	548 "	397 "	4
Garbage and combustible rubbish	160 "	944 "	422 "	38
Rubbish and ashes	0.29 cu. yd.	2.52 cu. yd.	1 cu. yd.	28
Ashes and non-combustible rubbish	0.18 cu. yd.	1.33 cu. yd.	.82 cu. yd.	18

Daily Refuse Wastes in American Cities

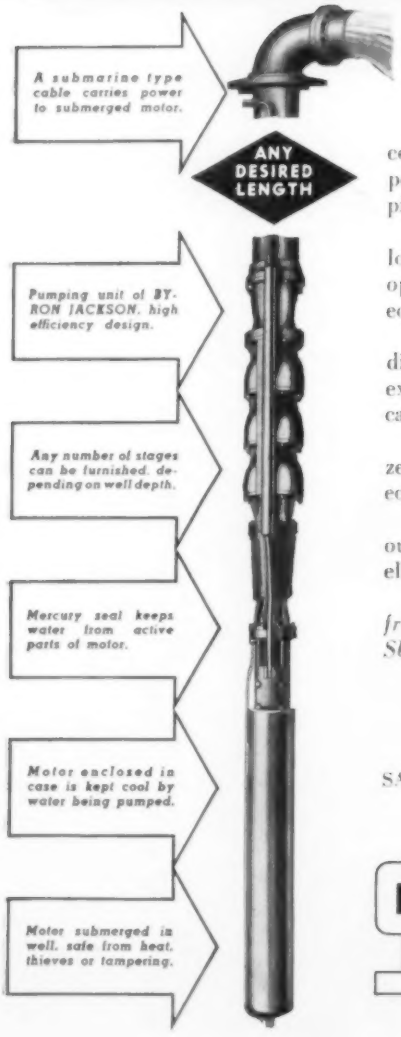
THE WIDE VARIATION in the quantity of municipal refuse collected by American cities is shown in the survey made by the American Public Works Association. For 1938, the year on which the study is based, figures from sample cities which collect all kinds of refuse, including garbage, ashes and rubbish, showed that some cities were collecting 2½ times as much as others, in terms of pounds per capita.

The amounts of refuse collected vary from city to city because of different limitations on the kinds collected, or because property owners voluntarily dispose of some refuse.

New Railroad Yard on Burning Dump

According to a report from Montreal, Que., when the Bergman Construction Co. began building the new coach yards for the Canadian National Railway Terminal at Montreal, 46 tracks wide and a half-mile long, along the railway shops in the St. Lawrence River lowlands, 200,000 yards of borrow material was required. This fill was secured from an old city garbage dump about 600 feet away. A LeTourneau heavy-duty rooter tore apart the old junk and garbage of all kinds composing this dump, part of which had been on fire for years and was a mass of red hot coals. This limited the operation of the dirt-moving equipment to periods of not more than two hours each. Three LeTourneau 12-yard Carryall scrapers and two LeTourneau Angledozers pushed and carried capacity loads of the smoking débris to the fill. In spite of the intense heat, the equipment worked as under normal conditions.

Tractor and Angledozer Spreading Smoke Fill from Old Garbage Dump in Montreal


A submarine type cable carries power to submerged motor.
ANY DESIRED LENGTH
Pumping unit of BYRON JACKSON, high efficiency design.
Any number of stages can be furnished, depending on well depth.
Mercury seal keeps water from active parts of motor.
Motor enclosed in case is kept cool by water being pumped.
Motor submerged in well, safe from heat, thieves or tampering.

350 H. P. AMERICAN TYPE

BYRON JACKSON SUBMERSIBLES are almost as far ahead of conventional, shaft-type deep-well pumps in their design and long term performance as shaft-type pumps are ahead of the Buffalo Power unit pictured above.

The elimination of the long shaft not only saves the usual shaft power losses, bearing wear, and down-time for repairs, but the SUBMERSIBLE operates perfectly in wells so crooked as to be useless with other types of equipment.

The weather-proof switchbox and controls may be located at *any* distance from the pump, and operated manually or automatically. No expensive pump house is required. Power loss through the submarine type cable is negligible.

SUBMERSIBLES cannot be flooded out; but in wind or rain, in sub-zero weather or in desert heat, they operate silently, efficiently and economically.

Many SUBMERSIBLES have run for years without repairs, and without renewal or addition of oil. Complete inspection and tests at the factory eliminate the need for any field adjustments at time of installation.

Every man interested in pumping water should have in his files the free brochure which contains a 44" cross section, four color drawing of the SUBMERSIBLE—a postcard or letter will bring you your copy.

BYRON JACKSON CO.
Dept. WS-11 Box 2017 Terminal Annex, LOS ANGELES, CALIFORNIA
FACTORIES: Berkeley and Los Angeles, Calif.; Bethlehem, Pa.
SALES OFFICES: New York, Chicago, Houston, Salt Lake City, Utah; Fresno, Calif.

BYRON JACKSON
SUBMERSIBLE

Municipal Airports

Special CAA Equipment for Major Airports

THE CIVIL AERONAUTICS AUTHORITY has announced that it will proceed shortly with the installation of instrument landing equipment at approximately ten important air terminals throughout the United States. The type of equipment to be installed is substantially identical with that developed at the Authority's experimental station at Indianapolis. The program calls for an extended service testing of this equipment at the ten airports to be designated.

The exact location of these service test installations has not yet been determined. The proper functioning of such equipment, according to the Authority's statement, requires that at least one runway at an airport be of considerable length and that the normal approach path to that runway be clear of obstacles for several miles. Some airports which are of importance to make instrument landing equipment desirable do not yet possess these features.

The selection of sites, as the airports meet these requirements, is to be made from a priority list of twenty-five submitted to the Authority by the Radio Technical Committee for Aeronautics, which represents the air transport industry, the radio industry, and the Army and Navy air services. This list includes: New York, LaGuardia Field; Airport; Chicago; Los Angeles, Mines Field; Kansas City, Mo.; Atlanta, Ga.; Seattle, Wash., Snohomish Airport; Fort Worth, Texas; Oakland, Calif.; Washington, D. C., Gravelly Point; Memphis, Tenn.; Salt Lake City, Utah; Minneapolis, Minn.; Miami, Florida; Pittsburgh, Pa.; Detroit, Mich., Wayne County Airport; Nashville, Tenn.; St. Louis, Mo.; Columbus, Ohio; Denver, Colo.; Philadelphia, Pa.; New Orleans, La.; Albuquerque, New Mexico; Omaha, Nebr.; Cleveland, Ohio; and Brownsville, Texas.

Zoning Laws to Regulate Buildings Near Airports

NEW MUNICIPAL ORDINANCES for the control of building heights in the vicinity of airports are growing in number as cities find it more and more necessary to prevent the construction of hazardous structures near their airports. The problem is intensified, according to the American Society of Planning Officials, by the increase in the amount of space needed for larger planes. Airport authorities now require a gliding angle of 1 to 15 feet instead of the former ratio of 1 to 7 feet.

A number of localities, including Fresno, Calif., Atlantic City, N. J., Omaha, Nebr., Dade County, Fla., and Chicago, Ill., have attempted to meet the problem by including in their comprehensive zoning ordinances restrictions on building heights in designated areas. Fresno, for example, limits buildings, poles, towers and smokestacks within 5,000 feet of the airport to heights ranging from 20 to 150 feet.

Other localities, including Boston and Baltimore, have undertaken to control building heights by passing specific ordinances for airports only. Whether or not the courts will uphold the specific type of ordinance in every state cannot be determined. For example, Baltimore's ordinance, which was concerned with aviation protection only, and was not based on a comprehensive plan, was recently held unconstitutional by the Circuit Court.

A third means of obtaining approaches to airports is through legislation authorizing condemnation for an easement, which makes possible the purchase of space. By this method a city may get rid of existing buildings, as well as prohibit future construction. State enabling laws of this kind were passed this year in Idaho and Illinois.

The 2,000,000-Candlepower 36-Inch Rotating Beacon at LaGuardia Field, New York

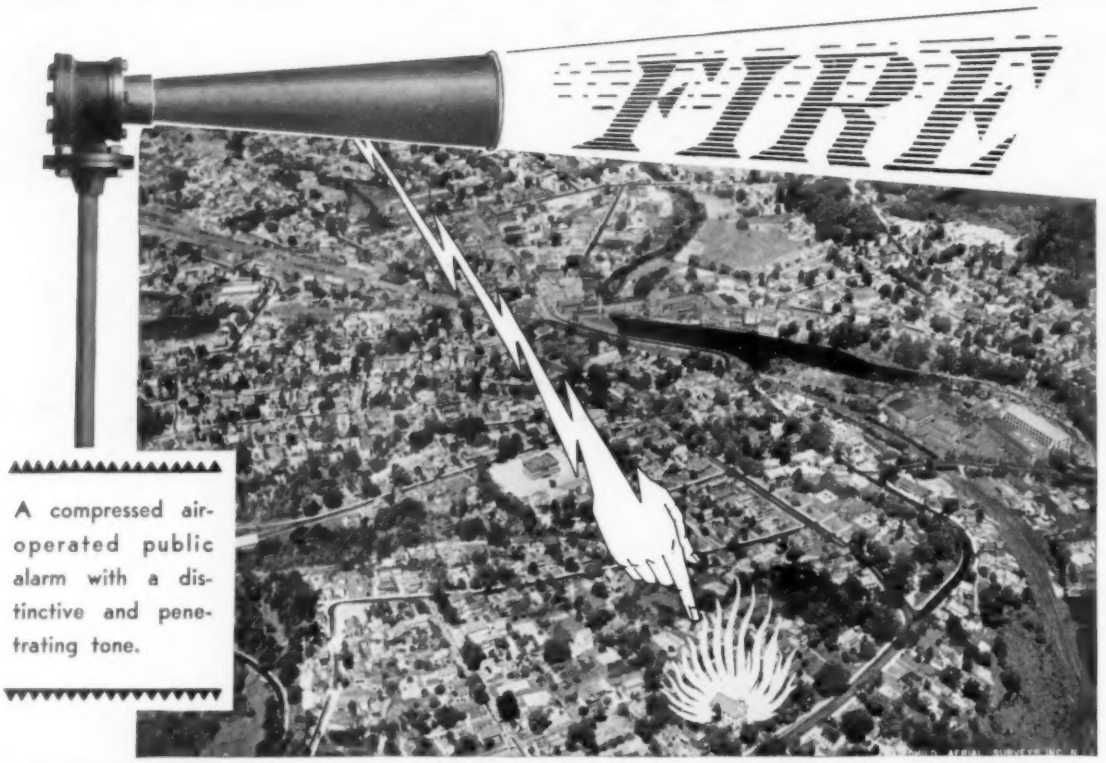
Automatic Beacon for LaGuardia Field

LAGUARDIA FIELD, the New York City municipal airport, has complete standard beacon identification consisting of a 2,000,000-candlepower 36-inch Westinghouse beacon rotating at 6 rpm and giving a high-intensity flash and a green flash each revolution. Both clear and green beams are produced by a single 1,000-watt special airway beacon lamp and an optical system consisting entirely of prismatic lenses. A lamp changer supports both the operating and the spare lamps so that if the operating lamp fails, a spare is thrown into position automatically without appreciable interruption. An indicating light is connected into the circuit with the spare lamp and is located on the control desk.

The auxiliary airport beacon is a standard 360-millimeter code beacon with green color lenses. Its purpose is to flash the code signal of the airport. The signal is repeated every 10 seconds and is controlled by a Westinghouse code flasher.

The 1940 Municipal Index will contain an article on the present and probable future CAA requirements for all classes of municipal airports.

THE DIAPHONE



A compressed air-operated public alarm with a distinctive and penetrating tone.

Credit Fairchild Aerial Surveys, Inc.

THE characteristics of the ideal public alarm necessarily include great sound producing power, carrying capacity, sound penetration, distinctive tone, ability to sound effectively coded signals, positive operation under all conditions, and reserve capacity. All of these qualifications are possessed by the Diaphone Compressed Air System.

Instances of electric power cessation . . sometimes for days at a time . . caused by storms, high wind, and sleet are not infrequent. The sleet storm in 1935 that crippled 75% of Georgia power lines, the hurricane of 1938 which left scores of New England communities in darkness for days, and the sleet storm of March 1940 which, within its path in Connecticut and adjoining states, inflicted even more damage than the hurricane, are recent occasions when many communities were without electric power for publicly announcing alarms of fire.

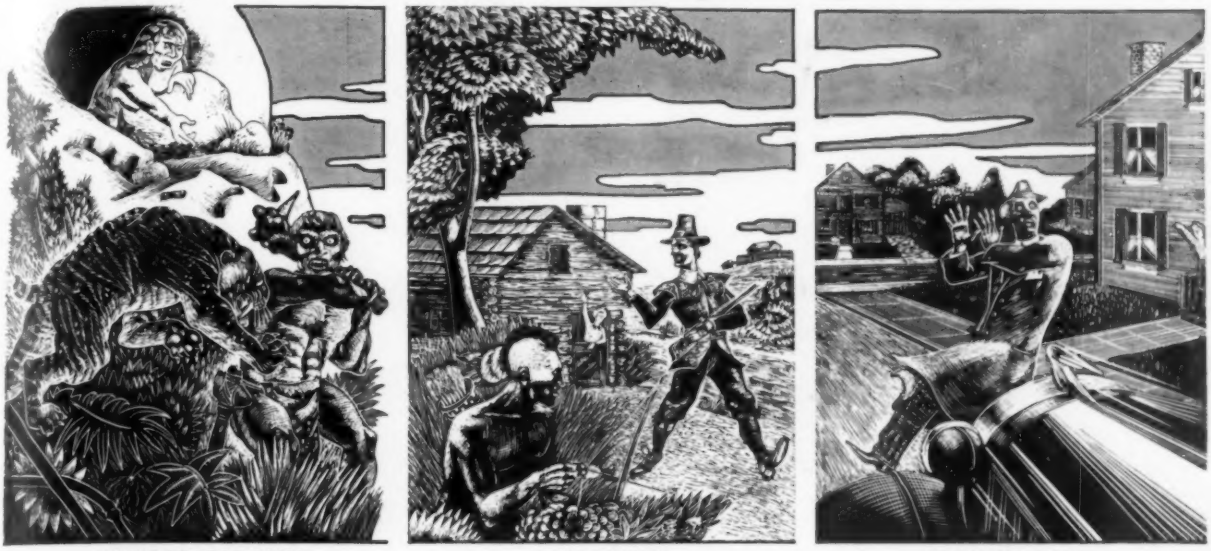
Diaphone compressed air alarm outfits are self-contained units which constantly maintain by means of automatically controlled compressors reserve capacity to sound a number of alarms. The Diaphone is the ideal public alarm. Write for catalog and estimates.

THE GAMEWELL COMPANY

NEWTON UPPER FALLS MASSACHUSETTS

When you write for that catalog, kindly mention THE AMERICAN CITY.

Public Safety



PREHISTORIC MAN — THE PIONEER — MODERN MAN

In a little folder that opens up to reveal these three eras of human hazard, The Travelers Companies, Hartford, Conn., remark that the modern man has one weapon not possessed by any of his predecessors—insurance. The municipalities pay millions of dollars a year for many kinds of protection—one is fire insurance, soon to be discussed in these pages. Insurance, like Traffic, is everybody's business; but an intelligent fire insurance program is really an engineering report on a specific property or on a group of related properties. Very definite economies frequently result from consultation with competent fire insurance engineers.

Fire Doings at Atlantic City

At the Forty-Fourth Annual Meeting of the National Fire Protection Association at the Chalfonte-Haddon Hall Hotel in Atlantic City, N. J., May 7-11, the following subjects of municipal interest were up for discussion:

The national importance of volunteer fire departments, led by Horatio Bond, Chief Engineer of the Association

Signalizing systems and proposed standards

Sprinkler systems

Protection of records

Trailer camps

Municipal fire apparatus

Air conditioning

Hydrants, valves, pipe fittings

Farm fire protection

The water-works view of the use of public water supplies for private fire protection, by Reeves Newson, consulting engineer and Past President of the American Water Works Association.

The Best Pool Promoter Is a Well-Designed Pool

When Intelligently Planned and organized, a swimming pool in the average community need not lack financial success. First create a community swimming-pool consciousness. When the public understands the value of a modern, clean, sanitary pool, and the reasons why bathing places that are below these standards are dangerous, the promoters have gone far toward the ultimate goal and are ready for the next step—the best design for the pool and all the equipment needed to provide safe and enjoyable bathing.

C. M. Roos,
Manager, Peoria, Ill., Water Company.

Carries the Occupants of 25 Automobiles

Above is One of 25 Diesel-Electric Twin Coaches put in service during the last six months between Long Island City and Manhattan. They carry 40 passengers seated, are equipped with General Electric drive and are owned by the Steinway Omnibus Corporation. Greater use of public carriers means less urban traffic congestion.

Police Organize 330 Boys and Girls

To Promote Friendly Relations between police and youth of his community and thus breed respect for law, character and citizenship, Col. R. W. Milburn, Chief of Police of West Palm Beach, Fla., formed a Junior G Man organization of boys 10 to 16 years.

Colonel Milburn's message is that creative and constructive thinking and performing bring far greater satisfaction than mischievous and destructive activities. There is no perfect crime, he insists, for always some telltale evidence remains. The boys, 246 of them now, are instructed in scientific crime prevention and detection—through the positive revelations of fingerprint identification. They are taught to classify and read fingerprints as well as take them, and their benefactor believes that thus they absorb the truth that crime does not pay. In time they are given a badge and a pledge to the effect that they must be good neighbors, make their character an example, by their conduct and acts bring credit to their parents as well as to themselves, and to the community, the Junior G men, and their country.

Colonel Milburn has also formed a girls' organization called the Junior Intelligence Bureau. The 84 girls of 10 to 16 receive the same instruction as their brother G Men.

Investigate

MAINTAIN 3 TIMES AS MANY MILES WITH PRACTICALLY THE SAME EQUIPMENT COST AND OPERATING EXPENSE

Here's how: Allis-Chalmers new W-Speed Patrol maintains most unpaved streets at 3 to 5 miles an hour . . . handles patching of black top, light construction and finishing . . . cuts sod from gutters. It's powerful enough to clean or cut 2-foot ditches in average soil conditions . . . or to pull gravel from ditches up to 30 inches deep. Enables you to release your larger, more costly outfits for street widening work or heavy construction maintenance. Yet the first cost of the W-Speed Patrol is so low—only $1485.00 F. O. B. factory—that you can buy 3 for the price of one big motor grader.

Operating costs are low, too. The W-Speed Patrol uses but 10 to 12 gallons of gas in a 10-hour day . . . requires only one man for operation . . . spreads your operating expenses over 3 times as many blocks.

Investigate this budget-stretching 3 for 1 street program. Your Allis-Chalmers dealer will gladly explain it to you. He's ready, too, to show you . . . with your own operators . . . on your city's unpaved streets . . how the W-Speed Patrol makes it possible. See him . . . NOW.

ALLIS-CHALMERS POWER

TRACTOR DIVISION—MILWAUKEE, U.S.A.

TRACTORS, ENGINES, ROAD MACHINERY

. . IT DOESN'T COST . . *it Pays!*

Vol. LV, No. 5 The American City MAY, 1940

The City Manager Plan Will Endure

By Richard S. Childs

LAST month Superior, Wis., (population 36,113), adopted the city manager plan and was promptly and widely heralded as being the 500th city to do so. This month there comes a book entitled, "City Manager Government in the United States,"[1] the result of an expedition sent out by the Social Science Research Council to investigate the working of this plan of government after 25 years. The two events mark something of a turning point in the history of this interesting political movement. Reaching the 500 mark brings the plan to the point where it is in effect in one city out of every six of over 5,000 population in the United States and by nearly 200 smaller municipalities. It is therefore inescapably a settled feature of the American political scene, no longer a novelty, since the combined experience of the cities runs now to several thousand years and through hundreds of elections.

The beginning of the plan was back in the days when starting a new idea for political reconstruction was rather easier than ever before or since. In those days the air was ringing with the cries of woman suffrage, initiative, referendum, recall, preferential ballot, recall of judicial decisions, direct primaries, and the commission plan of municipal government—each sponsored by an eager group which frequently told the others that its reform was the only real one worthy of consideration.

The "Bashful Advertising Man" Concocts Two Inventions

Into this mill I came as a bashful young advertising man in 1910 and added another idea to the heap. I called mine the short-ballot principle and set forth blithely on a program which called for the fundamental alteration of the constitutions of all the states, the invention of a better form of county government, and the rewriting of all municipal charters. In presenting my theories I was at the time embarrassed by none of the limiting influences of any special knowledge of the subjects I was discussing.

Having concocted one invention, the short-ballot principle, and having found that older and wiser people were quick to tell me that I was right, I found it relatively a simple step to give the commission plan of government an extra twist by adding a manager. As an idea it was no great contribution, but with the propaganda machinery of the Short Ballot Organization at my disposal I was in a position to put the idea into speedy circulation. I planted it by mail in Lockport, N. Y., and then from a distance publicly admired the Lockport Plan,[2] as I called it for a while, and got for it enough prominence so that charter commissions were sure to encounter it. Sumter, S. C., adopted the plan in 1912, and my press releases turned our admiration there.

One of my problems in those days was to conceal the fact that I was the plan's originator, since that would provoke the question of what I knew about those things, and it was a question I hesitated to face. So my name appeared rarely on the early literature, and I was tickled to have the first meeting of the City Managers' Association send me word that theirs was a purely professional association and that they knew of no reason why I should be curious to attend! Some seven years of propaganda followed, until I merged my little Short Ballot Organization into the National Municipal League, which has carried on since then. In my own mind I count Henry M. Waite, Manager of the first full-sized city to adopt

THE FATHER OF THE COUNCIL-MANAGER PLAN
He had an idea or two

The author of this article is the son of one of New York's outstanding civic leaders of a previous generation, the late William Hamlin Childs. Like his father, Richard S. Childs has combined a successful business career with eagerness to devote time, money, and a high degree of intelligence to public affairs. Since 1928 he has been a director of the American Cyanamid Co. and Executive Vice-President of Lederle Laboratories, Inc.

Civic organizations which Richard S. Childs has served as president have included the National Municipal League, the American Proportional Representation League, and The City Club of New York.

[1] Harold A. Stone, Don K. Price, and Kathryn H. Stone (Chicago: Public Administration Service, 1940). 266 pp. $2.50.

[2] See, for example, "The Lockport Proposal: A City That Wants to Improve the Commission Plan," by Richard S. Childs, in THE AMERICAN CITY for June, 1911.

the plan—Dayton, Ohio—as a co-founder, for in his pioneer work there he provided one of the most glittering four-year periods that any American city has ever seen, giving us an abundance of honest copy and an inspiration for the future. The fact that the first cities to adopt the plan all engaged their first city manager from out of town disposed of the last hazard to a propitious start.

Fifty Cities Surveyed

Now, when I am a bald old business man long absent from the active scene, three surveyors bring in a detailed picture of the present state of the city manager movement as it passes the 500th-city mark. Mr. and Mrs. Harold A. Stone and Don K. Price, the authors of the new book, "City Manager Government in the United States," spent about a year and a half living for some weeks in each of a succession of eighteen cities and interviewing endless local authorities from coast to coast. They inspired the cooperation of thirty volunteer collaborators who made similar studies of thirty-two more cities. The reports which they wrote about nine of the cities they visited, and which have been published as separate pamphlets, make up a supporting volume.[3] A third volume[4] consists of selected reports on seven cities written by various observers.

The over-all volume collates the information on various phases of the city manager plan in the fifty cities, seeking for trends and general facts and producing that rarest of all things in political science—new evidence. It is the first impartial, objective, and competent appraisal of the experience that has been made. Some of the evidence is interesting reading but is of minor interest from my peculiar viewpoint. It shows that the plan, by providing a single-headed executive with full powers to coordinate all departments, facilitates good administration. Even though effective mayors under the mayor and council plan had occasionally set up an orderly departmental administration or an orderly budget procedure or an intelligent system of handling personnel, here is an abundance of evidence to show that better administration was almost invariably the result of the city manager plan. It is confirmatory and gratifying.

The Really Original Feature

The really original feature of the city manager plan is in the relationship between the people and the council and between the council and the manager. No other plan provides so strong yet so flexible and natural a liaison between the people in the street and the technical administrators of the departments. The councils are small and powerful. The size tends to make their members prominent, their votes important, and the position attractive to able representatives. It widens the area of public choice, since the councilmen need not abandon their private careers and usually give only a few hours weekly to a council meeting. The council can be dominating or acquiescent in dealing with the manager. The manager can range the human gamut in personality, and still the plan need not break down. All this flexibility the study discloses, and good results are evident.

One of the most interesting things to me is the disclosure of the political mischief that results in cities that are, for instance, socially and economically divided; cities in which political partisanship organizes against everything that the chamber of commerce and the churches propose. On the other hand, there are cities where the population is free from any such instinctive loyalty to one side of a perennial contest; cities in which the able and well-to-do citizens enjoy the widespread confidence of the voters. In these cities the plan naturally has had some of its smoothest experiences. There are numerous cities in which the political machine did not exist in its legendary form at all before the city manager plan came in, and has not existed since; cities in which the adoption of the plan was brought about with cordial cooperation of the elective and appointive officials as an obvious mechanical improvement in the set-up.

All the early literature that I wrote in behalf of the plan dealt with political pictures like that with which I was familiar in New York City. My goal was the abolition of political bossism by so simplifying the task of the voter as to simplify the boss and the machine out of existence, leaving them no jumble of complexity in which to hide their machinations. These authors have brought out a much more authoritative picture of the diversified municipal scene, and yet it is plain that the simple, straightforward structure of municipal government was a good thing for all the cities surveyed, even though the reasons for adopting the plan were frequently not the ones that I put into my pleas.

One of the most interesting disclosures of the volume is the endless diversity of our American political landscape, and the findings are the composite result of facts piled up in an abundance almost unheard of in American works of political science. Only an expedition like this, generously financed, with an able personnel and plenty of time, could ever have made such a study, and accordingly it ranks as a contribution to American political science and a source book of high importance. Its influence is going to be widened because a large part is simple narrative, richly packed with facts, personalities, and circumstance, and is told in easy rippling English.

From "Happy Ignorance" to Lucky Outcome

It can readily be seen with what eager interest I have read this volume, since it makes me the hero in the narrative about the start of the plan in 1910. To anyone who has not had the experience of reading a book of which he is himself the hero, I commend the adventure. The fact that the authors got the flattering facts from me does not in the least diminish my satisfaction.

Well, anyway, this study brings to me the final comforting assurance on sound authority that the city manager plan has made good and will endure. Considering the happy ignorance in which I knitted the tiny garments of the movement in my salad days, the outcome is great luck! I promise never to try to do such a thing again!

[3] Harold A. Stone, Don K. Price, and Kathryn H. Stone: "City Manager Government in Nine Cities" (Chicago: Public Administration Service, 1940). 550 pp. $4.50.

[4] Mosher, Harris, White, and others: "City Manager Government in Seven Cities" (Chicago: Public Administration Service, 1940). 440 pp. $3.50.

A New Water System

Narragansett, Rhode Island, Completes New Pipe Lines and Elevated Tank with Town Funds under Both Force Account and Contract

The New 250,000-Gallon Water Tank

By Fred J. Coggeshall
Chairman,
Narragansett Water Commission

THE town of Narragansett has completed recently the construction of a water-distribution system to serve its Point Judith area, the residents of which are principally summer vacationists and patrons of the various boating, bathing and fishing facilities on the "Point." The new water system includes about 9 miles of mains, 6 to 10 inches diameter, service connections, fire hydrants, and an elevated tank of 250,000 gallons capacity. Water is purchased from the Wakefield Water Co., which owns the water system serving the Narragansett Pier section of the town.

The Town Council applied for Federal aid to finance the construction of the water system, and received from PWA an offer of a grant of 45 per cent of the cost of the project. Later, the Council rejected the grant offer, and ordered the Board of Water Commissioners to proceed with the construction work, financing the project from the $150,000 appropriation made for that purpose by the Financial Town Meeting in June, 1938.

Bids were about to be advertised when the hurricane occurred and devastated the Narragansett waterfront and particularly Point Judith. The starting of the water project had to be postponed for about a month, during which the resources of the town were fully employed in relieving distress and making ready for reconstruction.

On account of the hurricane many of the residents, particularly fishermen, had lost their employment, and it was necessary for the town to care for the needs of these people during a period of readjustment. As an emergency measure to aid these victims, the Water Commissioners decided to begin immediately the construction of a small section of the proposed water system by force account, all work to be done by hand labor. This project was started October 24 and finished December 3, 1938; about 2,300 feet of 10-inch Transite asbestos-cement pipe was laid, at a total cost of $7,200, including $3,200 for labor.

Alternate Bids for Pipe

On November 15, 1938, bids for the construction of the remainder of the water system were received; alternate bids were submitted for cement-lined cast iron pipe, asbestos-cement pipe, and lined and wrapped steel pipe. According to the specifications, cast iron pipe was to be Class 150, conforming with Federal Specification WW-P-421; asbestos-cement pipe was to be Class 150, tested at the factory to 600 pounds per square inch hydrostatic pressure. Steel pipe was to have a minimum wall thickness of 3/16-inch, an interior coating of

This line of Transite pipe was laid in beach sand 150 feet from tide water, and the trench was half filled with sea-water at high tide. Only short lengths of trench could be opened at a time, for the sides caved in in a few minutes

hot coal-tar base enamel, an exterior coating and wrapping consisting of two separate coats of hot coal-tar base enamel, a wrapping of asbestos felt, and seal coat of hot enamel; in other respects the pipe was to meet the specifications of the Underwriters' Laboratories, Inc.

The bids submitted by the three low bidders are as follows:

Bidder	Asbestos-Cement Pipe	Steel Pipe	Cast Iron Pipe
I. Capaldi & Sons, Inc., Providence, R. I.	$122,140.03	$123,286.98	$127,382.50
N. Cibotti Co., Boston Mass.	124,800.85		147,394.75
Karlson & Reed, Inc., Hicksville, L. I.	125,945.16		138,883.16

The low bidder was awarded the contract at an estimated total contract price of $122,140.03, on the basis of using asbestos-cement pressure pipe manufactured by Johns-Manville.

Laying the Pipe

The contractor started work in the middle of December, 1938. The pipes were laid sufficiently deep to provide an earth cover of 4½ feet, which has proved, in the Narragansett area, to afford sufficient protection against freezing. Before completely backfilling, the pipe lines were tested for strength at 200 pounds per square inch hydrostatic pressure, and for leakage at 100 pounds per square inch pressure. After backfilling and after the pipe had been under water pressure for 30 days, a final leakage test at 100 pounds per square inch pressure was applied, and the measured leakage for the entire system was 400 gallons per mile of main per day.

All dead ends have either a hydrant or a 1-inch blow-off connection to release air or to bleed the lines. All hydrants have two 2½-inch ports and one 4½-inch port, and all hydrants and valves turn to the right to open to correspond with similar appliances throughout the town. As finally constructed, the system includes about 28,000 feet of 10-inch pipe, 10,000 feet of 8-inch pipe, 9,500 feet of 6-inch pipe, 98 gate-valves, 137 service connections and 47 fire hydrants. The system was put into operation in the early part of the summer of 1939.

Operation of the System

All water coming into the system is metered and credit is allowed by the Wakefield Water Co. for all water going back through a meter for reverse flow. Water flows to the elevated tank by gravity by reason of its being 15 feet lower than the standpipe of the water company. Overflowing is prevented by a Golden-Anderson altitude valve which closes when water reaches a level 2 feet below the overflow pipe.

This town-owned water system is operated through an agreement with the Wakefield Water Co., the private concern which owns the supply. Water is purchased by the town from the water company under contract at 7½ cents per thousand gallons, and sold at the regular rates charged the individual takers supplied directly from the water company's mains, $25 annually for 62,500 gallons. For operating the water system, the Wakefield Water Co. is paid by the town $5 per year per active water-service connection.

The system was financed by a bond issue of $150,000 floated by the town, to be paid off over a period of 25 years at $6,000 annually with interest at 2¼ per cent. Residents of the area had petitioned for water for a number of years, and although the year-round population is small, the summer population is quite large. In view of the reduction in insurance rates, and of the convenience of having a water supply and fire protection, it is believed that building will increase rapidly and more taxable property will be created.

Plans, specifications and supervision of construction were furnished by Fay, Spofford & Thorndike, Boston, Mass. The general contractor was I. Capaldi & Sons, Inc., Providence, R. I., and the subcontractor for the elevated tank was Chicago Bridge & Iron Works. The project was constructed under the general supervision of the Narragansett Water Commission, the members of which are Fred J. Coggeshall, Chairman; Frank L. Caswell, and James Nall.

Urban Land Institute to Combat Urban Blight and Decentralization

THE Urban Land Institute, recently incorporated as an independent agency for research and education in the field of real estate, has as its purpose to assure sound city growth, conserve values in present business and residential areas, and open the way toward sound reconstruction of areas where decay is advanced.

The first major work of the Institute is a nation-wide study of the problem of urban decentralization. During the past decade, the movement of population, industry, and business away from city centers, when it has taken place at an over-rapid rate, has been unnecessarily destructive to urban values. The Institute will attempt to find the facts upon which individual cities may plan coordinated action, public and private, to combat over-rapid decentralization and to open the way for sound city development and redevelopment.

Other general work of the Institute includes:

(1) Collecting information concerning urban trends and developing recommendations for voluntary and legislative action

(2) Making available to cities desiring it an advisory service, through a board of consultants having specialized skill in each of the major fields affecting urban life and planning

(3) Preparing teaching material and books for use of educational classes in the field of real estate and community building

(4) Conducting courses, under its own supervision or in cooperation with established educational institutions, for training persons interested in problems of real estate, city planning, and community building, and by creating a group skilled and qualified to carry on research in the economics of real estate.

The Institute is a non-profit group, to be supported by dues of members, endowments and gifts. It seeks the support of business men, manufacturers, owners of income properties, home owners, mortgage investors, municipal governments, public utilities and others interested in its purposes. It is already cooperating with the Yale University Bureau for Street Traffic Research in a study of downtown parking problems in 62 cities, and with the Department of Commerce in collection of data as to real estate taxation. It is sponsored by, but independent of, the National Association of Real Estate Boards.

Consultants thus far selected include: Harland Bartholomew, on city planning; Miller McClintock, on street traffic; E. O. Griffenhagen, on municipal government and its finance; Colonel C. P. Wood, on industrial problems; J. C. Nichols, on residential real estate development problems.

Des Moines' New Airport Has a 4,500-Foot Runway

Recent Increase to One Square Mile Provides Primary Service for State of Iowa

By THEODORE REED KENDALL
Engineering Editor,
THE AMERICAN CITY

The Flush-Type Contact Runway Light

AIRPORT history in Des Moines, Iowa, began in 1927, when a citizens' committee raised $30,000 and loaned it to the city to lease 160 acres approximately 9 miles northeast of the city and develop an airport. This port was operated for five years. In 1928 the State Legislature of Iowa passed an enabling act permitting cities to own airports and hangars. This led to greater activity in developing a new and larger municipal airport at Des Moines.

In 1930 a new location, 5 miles southwest of the city, was selected, and a local bond issue of $200,000 was passed by the voters to develop it. This new port, ½-mile square, required 200,000 yards of grading, which was done by contract. Then two runways, each 100 feet wide and 1,800 feet long, running SE-NW and NE-SW, were laid out. In 1934 a N-S runway 100 feet wide and 2,200 feet long was added, the SE-NW runway was lengthened to 2,200 feet and the SW-NE runway to 2,450 feet. All these runways were paved with 5 inches of penetration macadam.

The original hangar at the old field was moved to the new location in 1931. It is 100 feet square with an 18-foot door clearance and 20-foot lean-tos on each side, one for offices and the other for a shop and a city garage. At the same time the lighting equipment was moved from the old to the new port, and flush-type runway lights were installed on the SE-NW and the NE-SW runways.

Program of Enlargement

In October, 1938, a new program of improvement was started. A bond issue of $295,000 was passed, and sufficient land was bought to make the field one mile square, making it possible to have the new Class 4 4,500-foot runways. The three existing runways were relocated and an E-W runway added.

The SE-NW runway was lengthened to 5,200 feet and the new portion paved with concrete. The NE-SW runway was relocated entirely, lengthened to 4,500 feet and paved throughout with concrete. The N-S runway was also entirely relocated, lengthened to 4,500 feet and widened to 150 feet to permit instrument landings. The new E-W runway is 100 feet wide and 4,500 feet long.

Grading Operations

The new three-quarters of a square mile, added to the old one-quarter square-mile airport, has required 2,040,000 cubic yards of grading. On the extension of the NW-SE runway a 30-foot fill was required across a ravine. This was jetted to speed settlement and then allowed to settle through the 1939-40 winter before completing paving at the NW end of the runway.

Air View, Taken in 1939, of the Des Moines Municipal Airport

The other runways are mostly in cuts with shallow fills of 3 feet maximum depth, which have been compacted with sheepsfoot rollers and then paved immediately.

Inasmuch as most of the work on the airport has been done by WPA relief labor, clearing and grubbing on 120 acres was left for last winter. Small grading operations were also continued. Because of the low temperatures, running to 22 degrees below zero, it was necessary to use dynamite to break up some of the earth. This was hand-loaded to a fleet of Brooks Load-Luggers and Dempster Dumpsters. These machines and their loading skips were used, with twenty men for each of the six buckets. According to Harold L. Tillson, WPA Area Engineer for Polk County, the unit cost of dirt-moving with the seven Load-Luggers and the two Dempster Dumpsters, was the same as with a 1¼-yard dragline loading to 16 trucks on this same work. This comparison is based on a 42½-cent hourly wage for hand labor. The hand-loaded outfit and the dragline outfit were less than 100 cubic yards apart in the quantity of dirt moved per 10-hour day. The other dirt-moving machines used at various different times included 42-inch Austin-Western and Caterpillar graders loading to trucks, four Euclid 10-yard TracTruks and six Koehring Dumptors. Four RD-8 tractors with 12-yard carry-alls were also used, and four Allis-Chalmers WSO tractors with 7-yard LaPlant-Choate scrapers. A city-owned Bucyrus-Erie crane was rigged as a dragline and a shovel for grading, and was also used for feeding the batch bin for the concrete paving operation, which was handled by a Koehring 27-E paver.

Drainage

The new airport is on the crest of a divide and drains to the south, west and east. Six-inch agricultural tile with butt joints and weeps into the main sewer at 500-foot intervals was laid through the clay soil at the one-third point of the concrete paved runways 4 feet below the surface, to keep down the water table in the clay. The trenches for this drainage tile were hand-excavated, backfilled and hand-tamped to insure a solid subgrade foundation for the runways pavement.

The runways were laid with a 5-inch drop from the center line to the side of the runways, and a 5-foot gutter was laid at the side with a 2½-inch rise. Inlets were made in this gutter every 200 feet, delivering the water to 10-inch to 36-inch pipe. For this purpose the pipe from 10 to 15 inches in diameter was vitrified clay, and over 15 inches was concrete. A moderate amount of 10- and 12-inch vitrified clay, bell-and-spigot type with open joints, and 15-inch concrete pipe, was used for draining low areas throughout the airport. Two creosoted wood outfalls were built as box culverts 677 and 500 feet in length.

All the concrete pipe was made in the old No. 1 fire station in the city, using WPA relief labor to manufacture the pipe in Quinn forms. The pipe made in this manner included 15-, 18-, 24-, and 36-inch diameter pipe.

The 80-foot-wide taxi strip on the east side of the field, and one the same width connecting the east-side taxi strip with the crossing of the three major runways, were paved with concrete with an inverted crown, so that they would drain to the center where the inlets are located.

Concrete Paving

The 80-foot width taxiways were paved in four 20-foot strips. The N-S runway was poured with a 10-foot strip in the center and 10-foot strips at each side, with three 20-foot strips on each side of the center strip between the center strip and the earth strip. The 100-foot runways were all run with four 20-foot strips in the center and one 10-foot strip on each outside edge. All the 10-foot strips, including the center strip of the N-S, or instrument landing, runway, were water-cured to give a white surface as viewed from above. The 20-foot strips were all cured with bituminous coating, giving a darkened

At Left—One of the Elevating Graders Loading to 10-Yard TracTruks

At Right—One of the Fleet of Dempster-Dumpsters and Load Luggers

surface so that the contrasting color of the edge strips would act as runway edge marking strips. Likewise, the white center strip in the instrument landing runway gives a distinct center line marking, visible in the air for a considerable distance from the airport.

Continuous tongue-and-groove joints were run at the edges of all 20-foot strips when the forms were set, but a partial depth joint with fixed dowels was used in the center of each 20-foot strip; thus every 10-foot interval transversely of the runways has either a partial depth fixed dowel joint or a continuous tongue-and-groove joint. Partial depth contraction joints, also with fixed dowels, were used at 20-foot intervals between expansion joints. This forms ¾-inch expansion joints at 100-foot intervals longitudinally, and four doweled contraction joints between the expansion joints. In this way the longest span transversely is 10 feet, and the longest continuous longitudinally is 20 feet. It is expected that this will greatly minimize cracking in any direction, if it does not altogether eliminate it. Also, this means that there is a maximum of load transference from one monolithic slab to another. It is believed that these relatively short spans and the high degree of load transference eliminate the necessity for other reenforcement, under the soil, load, and operating conditions of this field. The grill or network of agricultural tile drains only 4 feet below the surface of the slab is expected to reduce capillarity to a minimum and thereby induce a stable subgrade condition, further assisting the performance of this relatively light slab.

All the paving was done with relief labor. Turn-arounds are installed at both ends of all runways.

All aggregate for the concrete runways was produced by a city-owned 8-inch diesel-powered dredge costing $16,000 and located in the Des Moines River near the outfall of the new sewage-treatment plant. This dredge was bought to supply the aggregate and was later used to supply hydraulic fill around the various basins at the sewage-treatment plant. It is also to be used for dredging under the numerous bridges which connect the east and west portions of Des Moines, and to dredge out a lagoon, which is connected with the river at Birdland Park, one of the recreational centers of the city.

The Bucyrus-Erie 32-B Crane Loading Trucks on the Des Moines Airport Grading Project

Lighting

The lighting at the field includes obstruction lights, flush type runway lights, boundary lights, range lights and the code beacon. Obstruction lights have been installed on trees and houses in the south and southeast boundaries of the field. A telephone line across the north boundary of the field has been removed for a distance of 1,000 feet, centering at the end of the N-S runway, so that obstruction lights are not necessary at that boundary.

Westinghouse tip-over-type boundary lights are installed around the edge of the field. There are 54 of these 600-lumen lights.

Runway lights are used instead of floodlights. A special kind of flush-type contact light, developed by Crouse-Hinds, has been installed with a 200-foot spacing. These 152 lights of 1,000-lumen units are built with the support for the top inside the glass, so that snow and dirt do not accumulate around outside fins, and the light globes are self-cleaning. The accompanying illustration shows the manner in which these lights are set in a 3-foot square concrete block with a ½-inch rise to permit draining away from the lights. The 8-inch thick block is cast about the lights, and an 8-inch vitrified clay pipe inserted in the ground in a hole made with a hand-auger. The enlarged space above the bell is backfilled with sand, and the bottom 10 inches of the pipe is filled with gravel. Because of the difficulties which the airport superintendent has experienced in the past with contact lights sweating, a novel method of overcoming this has been devised, making use of the vitrified clay pipe below. In the bottom of each contact light is a ½-inch plug. This is removed and replaced with a storage nipple through which the light "breathes" and frees itself of moisture. The cables for the lights are carried through pipes cast into the concrete block around the lamp and carefully packed with okum to minimize the entrance of moisture. To further protect these lights at times of heavy snowfall No. 9 wire, 18 inches long, is wrapped around one of the studs holding the top of the light and with a loop at the top in which is tied a small piece of red bunting. This makes it possible to quickly dig out these lights after a heavy snowstorm and also locates them so that tractors pushing plows or hauling disks to break up the crust of the snow, and hence permit earlier landing, will not damage the lights. These contact lights stand only 2 inches above the runway, and the glass globe around them is cast with a beam lens in

(Continued on page 77)

"It's Waste to Waste Waste"

This War Slogan in Great Britain Should Be Given Serious Consideration in the United States, where Municipal Salvage is Little Known

MUNICIPAL authorities and private householders in Great Britain are being enlisted in a national effort to conserve such waste products as paper, cloth and glass which are normally discarded by householders. By this campaign they hope to relieve shipping space and thus help to save the lives of men of the Merchant Navy and the Royal Navy.

Nearly 2,000 local authorities have been asked to provide monthly returns showing the quantity and value of salvage material recovered from household wastes. The natural and largest organization for the collection of waste material is of course the network of garbage and cleansing departments of the local authorities spread over England, Scotland and Wales. But of the 2,000 organizations approached, only 600 were actually engaged in salvage work at the beginning of the war. Those 600 represent a population served of about 26,000,000, and the work varied from that done by Birmingham, which put back into industry the equivalent of $150,000 of salvage material a year, to salvage work in some smaller communities worth only a few hundred dollars. The 300 authorities which had done no salvage work include those in a large number of rural areas which are so scattered that organization and collection is a difficult problem; on the other hand, there are those with a population far above 10,000 which had taken no effective steps, and these are now applying themselves to this work.

One obvious value, apart from the campaign's national urgency, is the fact that many municipalities which find themselves burdened with heavier taxes for the maintenance of air-raid precautions, thus have a means by which, with proper organization, they can reduce those taxes considerably.

H. G. Judd, Controller of Salvage, Ministry of Supply, points out that the most valuable materials are waste paper, bones, scrap metals, rags, and kitchen wastes for pig and poultry feeding. Normally, 1,500,000 tons of waste paper found its way into Great Britain's garbage cans annually. Allowing for the reduced issues of newspapers, this quantity is now down to about 1,000,000. Normally only 50,000 tons of this was recovered. The aim now is to save 50 per cent. That will produce over 500,000 tons for the paper mills and save the importation of nearly that quantity of wood-pulp.

WASTEPAPER

Many public spirited and enthusiastic persons in various parts of the country are puzzled to find that their waste paper which they have dutifully saved is not being collected. This announcement explains the situation and gives

the only satisfactory solution of this urgent problem

In addition to the normal trade sources of supply (the Wastepaper Merchants who collect paper in *bulk*) efforts are now being made to collect the enormous tonnage scattered over Britain's ten million homes. Obviously this is a huge undertaking—yet *a perfect solution exists.* In every large town the dustman calls regularly and removes the household waste. Here is the organisation ready-made, the transport and the labour. All that is needed is for the waste paper to be bundled and put *beside* the dustbin and not *in* it. Many enterprising municipalities were already working this system before the war and making money by it. Many more are now adopting it.

Every town of 10,000 inhabitants or more should be working this scheme

It cannot be improved upon for the larger centres of population. Voluntary effort, however well directed, cannot possibly be a substitute for the thorough combing of the regular house-to-house dustman's call. Millions of calls must be made every week, concentrating the millions of small household parcels of waste paper into one great steady stream of supply.

If you are a ratepayer in a town of 10,000 inhabitants and over, ascertain if your local council has or is about to establish such a collection scheme. If so, your enthusiastic co-operation by saving and handing to the dustman regularly all your clean waste paper will be a definite contribution to the country's raw material resources. If not,

use your influence to get the scheme started

Waste paper in very small quantities has practically no monetary value. Its industrial value begins to count only when the small lots have accumulated into tons. Hence its collection in thinly populated areas or small towns presents considerable difficulty. Where, however, houses are not too widely scattered and no council collection is practicable, voluntary organisations can often arrange collection with profit to their funds.

This announcement is intended to emphasise the importance of the Municipal collection of waste paper—the ideal and only adequate means in the populous sections of the country.

WASTE PAPER INCLUDES BOOKS, NEWSPAPERS, CARDBOARD, OLD LETTERS, ENVELOPES, ETC.

W.P.4722

Advertisement from an English newspaper

Newspaper Publicity

"We want the best scraps; you

have them," says Mr. Judd. "Every household, shop and factory has in its cupboards and storerooms accumulations of newspapers, magazines, show cards, invoices and price lists, lying there awaiting the day when they may come in useful. That day has come."

Appeals to the householder are now appearing throughout the national press in stories, articles and advertisements, such as that reproduced here. Stickers are attached to garbage cans by dustmen employed by many municipal councils to remind the housewife that her contributions are welcome. It is stressed that she should not place paper, for instance, among other rubbish, but in a separate container, so that it will not become soiled.

Boy Scout organizations are arranging collections in the sparsely populated areas, and the Women's Voluntary Services and Girl Guides are also organizing similar work.

Old Iron and Metals

The Iron and Steel Department of the Ministry of Supply has scoured the factories, workshops and mills, and to date has collected close to 100,000 tons of old iron. Rural areas, where masses of discarded farm implements are available, are being thoroughly combed, and even in France an Army organization is busy bringing back scrap metal.

Scottish Thrift

As might be guessed, Scotland is a shining example of thrift in the salvage of waste. J. C. Dawes, Deputy Controller of Salvage, reports that in 22 districts there is now available for local authorities advice by municipal experts who have become the Department's local advisers. November, 1939, returns in Aberdeen show that about 36,000 tons of material were handled and returned to industry by local authorities, for which they received about $150,000. December and January returns were even larger. In November 1,000 tons of paper a week were passed from local authorities to industry, and 500 tons of rags were salvaged; and the Ministry of Food, which is now operating the slaughterhouses, has made arrangements for salvaging organic waste matter.

Efforts in Birmingham

The recovery of materials of commercial value from collected refuse is systematically pursued at the five large works of the Birmingham Corporation Salvage Department. The financial gain is about $150,000 a year. Magnetic separators remove from the refuse all the cans and other ferrous metals, which, together with galvanized and enamel scrap, are compressed by hydraulic baling presses and sold. The mechanical process is followed by a close scrutiny of the refuse attendants, who, as the waste passes along a moving belt, extract anything salable. By this means half a million bottles and jars, about 1,100 tons of textile waste, 600 tons of broken glass, 500 tons of paper and strawboard, 300 tons of bones, and more than 100 tons of non-ferrous metals, are saved. About 40,000 tons of clinker and ashes are sold in a year. Cheap electric power is obtained by using the heat from the incineration of the remaining refuse to generate steam.

Of the 85,000 tons of garbage collected annually at Newcastle, about 30 per cent is treated by a separator plant. In peace time this plant recovered 2,000 tons of cinders, 800 tons of scrap metal and 110 tons of rags annually.

Statistics

No definite national statistics covering every branch of reclamation in Great Britain are available, but estimates based on figures gathered at the Conference of Public Cleansing two years ago, on the contents of garbage collected from 1,664,646 houses in England and Wales inhabited by 6,390,670 people, showed that the yield per thousand of the population was 1,319 pounds of dry refuse from galvanized storage bins, or a total of 8,348,857 for the year. It was estimated that fine dust, suitable for covering controlled tips or as filling for playing fields, could be recovered in the amount of 3,111,944 tons. Cinder content in the total was estimated to yield 1,641,944 tons of burnable fuel.

Ratepayers, English for taxpayers, had to pay approximately $6,000,000 a year for the removal and disposal of that fuel. From that 8,348,857 tons of refuse, it would be possible to regain 1,130,526 tons of vegetable matter, 1,318,282 tons of paper, 347,547 tons of metal, 155,797 tons of rags, 287,625 tons of bottles and broken glass, 39,948 tons of bones, 183,760 tons of boots, wood, rubber, etc., and more than 330,000 tons of pots, stone, brick.

We Americans are proverbially the most wasteful people on the face of the globe. What are we going to do about salvaging waste before it becomes necessary through a national emergency?

Spending Government Money to Build a Stronger Nation

SLUM clearance and better housing is ranked among the top three non-military activities "on which the Government should spend the most money," according to a recent independent survey by *Fortune* over a comprehensive cross-section of "both the prosperous and the poor" among the nation, and reported in the April issue of that magazine. It was indicated that 88 per cent of those polled regard the slum-clearance program of almost equal importance with old-age pensions in reducing poverty and unemployment. Such reduction was voted more important than increasing armaments, dealing with agricultural problems, and constructing public works.

It is gratifying to know that in helping to solve the domestic human problem slum clearance and better housing is very highly rated.

The score was as follows:

Reducing poverty and unemployment	76
Increasing armaments	65
Dealing with agricultural problems	62
Public construction	42

Fortune then asked: "Of these things having to do with reducing poverty and unemployment — providing work relief, providing old-age pensions, clearing slums and providing better housing, and training skilled labor —which do you think is, or might be, the most important on which to spend money in order to build up a better and stronger nation?"

The score was:

Old-age pensions	60
Slum-clearance and better housing	58
Training skilled labor	56
Work relief	52

Water Softening

Six New Wells and Lime and Soda Softening Greatly Improve Hamilton, Ohio, Domestic Supply

By JOHN E. SUEDKAMP
Chemist
Municipal Water Works

FROM 1883 until 1935, the domestic water supply at Hamilton was pure and wholesome but very hard. As the city, established in 1800, in the middle of the Great Miami Valley, grew to its present population 53,000 with its huge machine tool and paper industry, the number of wells were increased, using the same well field for a period of over fifty years. In 1929, it became evident that the present supply of water was gradually being exhausted. In the realization that the city might be faced with a serious water shortage, steps were taken, as an emergency measure, to improve the supply. Bad tastes, due to algae from an open reservoir, were another problem. Small domestic water softeners installed by consumers caused considerable discussion of municipal softening of the entire supply. In 1930, the city administration instituted a survey for a new source of water, and there was a study of softening and of the distribution system.

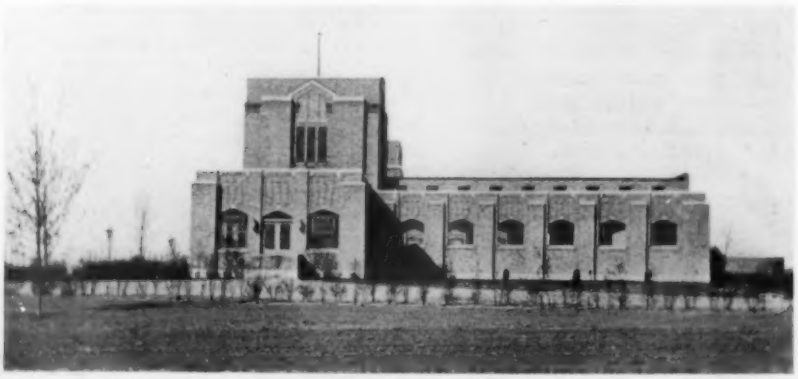
In October, 1933, a PWA grant and loan were secured for a project divided into five contracts: (1) wells; (2) new force mains; (3) new distribution reservoir, and covering a 6-mg old reservoir; (4) a softening plant; (5) laboratory, office furniture, fixtures and equipment for the plant.

New Well Field

The new well field was located after a number of tests had been made, and lies nearly one quarter-mile north of the old field. Numerous tests showed this location to have a large supply of underground water which should last for a considerable period.

With the new field located, six wells were sunk by W. L. Thorne Co., of Des Plaines, Ill., varying in depth from 110 to 180 feet. The casings are of wrought iron pipe, 18 inches in diameter. Johnson well screens of Armco iron, 60 feet long, extend into the water-bearing sand and gravel. After the required depth had been reached for each well, a 24-hour pumping test was made at a rate of 2,000 gallons per minute, and all wells proved satisfactory. They are laid out on the basis of equilateral triangles.

The six well houses are built of buff brick with terra cotta trim, harmonizing with the plant buildings. The wells are equipped with Peerless deep-well pumps driven by 50-hp Westinghouse motors using 440 volts AC, controlled from the main switchboard. The water from each well flows to a central 30-inch main, through a Builders Iron Foundry Chronoflo venturi meter, to the chemical building. In the winter months only two wells are used, furnishing 4 mgd, while in the summer during peak loads three wells are used delivering from 5.5 to 6.0 mgd.



The main building of the Hamilton, Ohio, Municipal Water Works from the side, showing the filter room at the right and the pump-room wing extending toward the reader

Chemical Building

The chemical building is a steel-frame structure with exterior walls of buff brick, trimmed with terra cotta, the architecture being modified Gothic.

Inside the chemical building are the Aer-O-Mix aerator, a Dorr flash mixer and two basins 13 feet wide, 45 feet long and 15 feet deep, with Dorr flocculators driven by 5-hp Westinghouse motors. Also, on the first floor adjacent to the aerator are two lime slakers with ¼-hp motors for the feed, and 3-hp motors for mixing. The rate of speed varies from 5 to 3,000 pounds per hour. Two Omega dry chemical feed machines, one for alum, and one for soda ash capable of feeding from 1 pound to 500 pounds per hour, are also located on this floor.

The basement provides access to the piping, the Draco sludge pump driven by a 5-hp Westinghouse motor, and the Chicago sump pump with a capacity of 40 gpm and driven by a ¼-hp motor. On the second floor is the head box for the aerator. The water from the wells is pumped to this box and then flows by gravity through the plant. The third floor and penthouse contain the pneumatic unloading equipment furnished by the Draco Co. A unique feature of the unloading equipment is that the suction line to the unloading siding is

over 500 feet long. The system has a capacity of 5 tons per hour, and is equipped with a Root-Connersville blower driven by a 50-hp Westinghouse motor. A storage space for five carloads of chemicals in four concrete bins is located between the second and third floors.

Directly in back of the chemical building are two Dorrco siphon-feed clarifiers, 60 feet in diameter with a 1.5-hp Westinghouse motor driving two 30-foot circular rakes for collecting the settled lime sludge. The sludge is pumped through an 8-inch line to the river.

Connected to one side of the chemical buildings are two carbonation tanks of concrete 30 feet long, 10 feet wide and 15 feet deep. An Infilco carbon dioxide producer, with a maximum capacity of 150 cubic feet of gas per minute with 12 per cent carbon dioxide, is installed for burning coke. A Nash Hy-tor compressor driven by a 10-hp Westinghouse motor furnishes the artificial gas. The gas is delivered to seven pipe laterals in each carbonation tank for recarbonating the softened water.

Main Building

The main building is the same design and architecture as the chemical building. In the tower directly over the lobby is a 72,000-gallon wash-water tank, which is filled by a 750-gpm Allis-Chalmers pump, taking suction from the clear well. The tank is 23 feet in diameter and 30 feet high.

In one wing of the main building are a spacious laboratory, office, wash rooms and showers. The opposite wing houses the pump room with a balcony surrounding the pump floor. In the pump room are two 7-mgd DeLaval centrifugal pumps driven by 600-hp General Electric synchronous motors, and one 3-mgd Allis-Chalmers pump driven by a 225-hp induction motor. The wash-water pump is also on this floor. Space has been provided for an additional high-service pump when required. Overhead is a Euclid-Armington 10-ton crane for handling the installation and maintenance of the pumps and motors.

On the north wall of the pump room is the main control panel, 15 feet long and 7½ feet high. All the switching gear, well controls, reservoir gages, water-level indicators and meters are located on this panel.

The front of the main building is seen at the right, with the laboratory wing at the left and the pump-room wing on the right. The other structure is the chemical building

Directly under the lobby is the rear of the control panel and the transformer room as well as the emergency lighting system. There are three transformers, a 333-kva, a 50-kva, and a 10-kva. Adjoining the transformer room and under the laboratory are the boiler room, ash room, coal room, coke room and chlorine room.

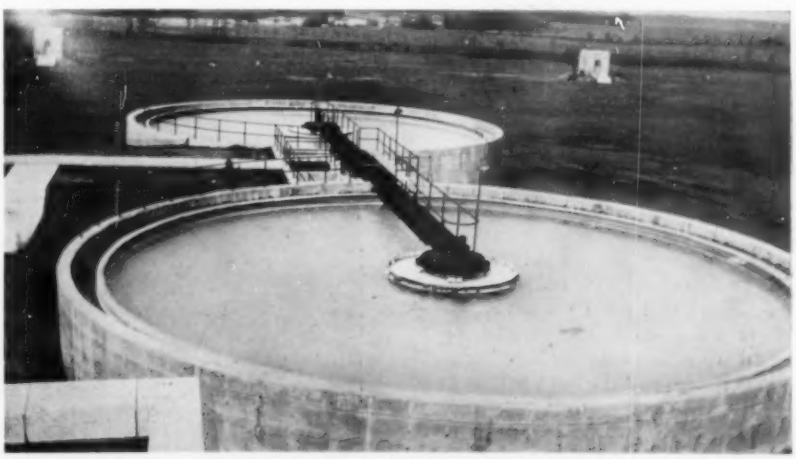
On the first floor, adjacent to the lobby, is the filter room, the corridor of which has a tile floor and a wainscot of buff-colored tile trimmed in green with antique plaster walls and ceiling. The six 1-mgd capacity filters are equipped with Wheeler filter bottoms furnished by the Roberts Filter Co. A Simplex meter and wash-water indicator is hung from the walls. The 850,000-gallon clear well is next the filter room underground.

Distribution System

Two parallel 24-inch cast iron lines are laid from the plant to the corporation limit. Here one force main joins the main extending to the business district and to the reservoir on the west side of the Miami River. The other force main goes east and feeds the eastern portion of the city and is tied into the reservoir on the east side of the Miami River. The east reservoir is a new covered rectangular 6-mg storage reservoir built at the same elevation as the old reservoir on the west side, which is circular in shape and of the same capacity and is also covered over.

Both reservoirs always float on the system and furnish a head of 240 feet of water or 90 pounds per square inch pressure in the business district even when the pumps are shut down. Pumping is continued only until the reservoirs are filled, and then the reservoirs are

(*Continued on page 77*)



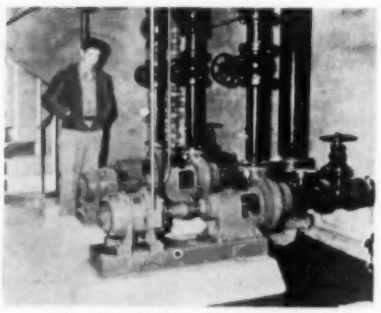
The two clarifiers as seen from the roof of the filter room of the main building. Two of the well-houses are seen in the background

Close-up of Pump House

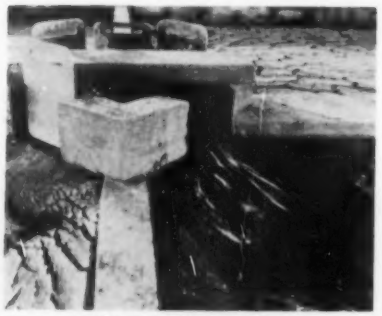
Pump House and Filters

General View of Old Plant

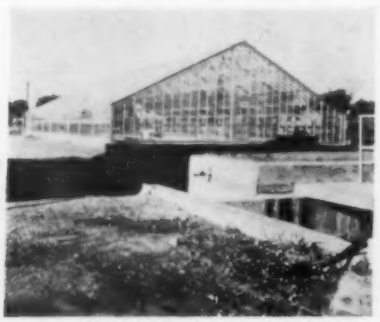
Corner of Old Laboratory



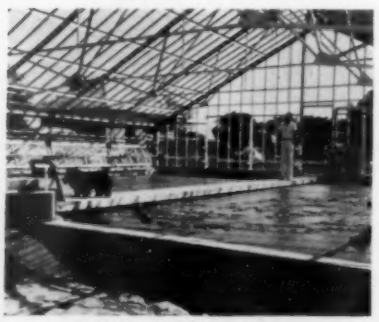
The Pump Room in Basement



Digested Sludge Flow



Glass-Covered Sludge Bed



Interior of Sludge Beds

New Sewage Plant for Ma

By W. F. SHEPHARD
**Assistant Engineer,
Bureau of Engineering,
Michigan Department
of Health**

THE city of Mason has recently completed the construction of additions to the existing municipal sewage-treatment plant. This city, the county-seat of Ingham County, in which the State Capitol is located, has a population, according to the 1930 census, of 2,575. It obtains its water supply from wells, and the effluent from the sewage-treatment plant is discharged into Sycamore Creek, a tributary of the Red Cedar River.

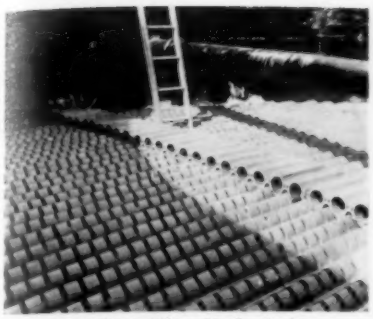
About 1924 the city constructed two plain settling tanks as a step in providing treatment for the sewage of the city, which previously had been discharged into Sycamore Creek untreated, giving rise to bitter complaints from lower riparian owners, and occasionally killing fish. Shortly after this, one of the two original tanks was converted into a sludge digester, and the remaining unit was divided into two equal parts and equipped with sludge-removal mechanism. Gas domes were provided for the collection of gas from the digester, and the necessary heating units and sludge pumps were installed. However, because of the extremely low summer-time flow in Sycamore Creek, probably not more than 1 cfs, even this improvement was found to be insufficient.

Because of continued unsatisfactory conditions, the City Engineer was requested to make a report to the Mayor and Council in February, 1937, on a plan to solve this condition. Following the receipt of the report, an application was filed with PWA for a grant to assist in financing the recommended improvements. The grant was subsequently made. The Wolverine Engineering Co., of Mason, was engaged to prepare plans and specifications for the proposed additions, and the contract for construction was awarded in January, 1939.

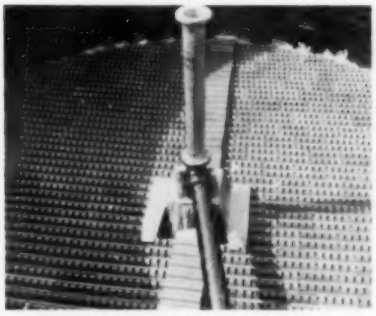
The New Plant

As finally constructed, the plant consists of a bar screen, grit chambers, duplicate primary settling tanks, pumping station, two high-capacity trickling filters, final settling tank, sludge pumping equipment, digesters and glass-covered sludge drying beds, a building to house the laboratory, office, heating equipment, sludge pumps and tool storage.

The designed capacity of the plant is 0.35 mgd average, with an absolute maximum rate of 0.97 mgd. The plant will serve a popu-



Trickling Filter Underdrains



Underdrains and Center Column

Lowering Filter Stone

reatment
lason, Mich.

Enlarged Plant Will Treat Sewage, Milk and Other Trade Wastes —Rapid Filter

lation of 3,000 and, in addition, an industrial establishment producing milk and pharmaceutical products resulting in waste having an estimated population equivalent, on the basis of 5-day B.O.D., of about 3,000.

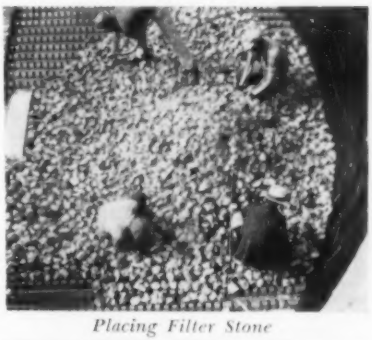
The velocity of flow through the grit chamber varies from 0.3-foot per second up to a maximum of 1.5, and a volume of 17 cubic feet for grit storage is provided. Grit is removed manually and used for filling. The bar screens are the manually cleaned type, and the screenings are disposed of by burial.

The two primary settling tanks have a capacity of 33,700 gallons each, providing a normal detention period of 196 minutes. They are equipped with Link-Belt Straightline collectors. The tanks are 62 feet 6 inches long, 9 feet 6 inches wide, with a water depth of 8 feet. The sludge sumps at the inlet end of these tanks extend an additional 4 feet 4 inches in depth. They are inverted truncated pyramids with the top 9 feet 6 inches by 5 feet 5 inches, and the bottom 2 feet 6 inches by 2 feet 6 inches. An 8-inch sludge line leads from each hopper directly to the sludge pump in the control building or to a sludge well adjacent to the control building, from which the sludge pumps may also take suction. Raw sludge is discharged to the digester through a 6-inch cast iron line.

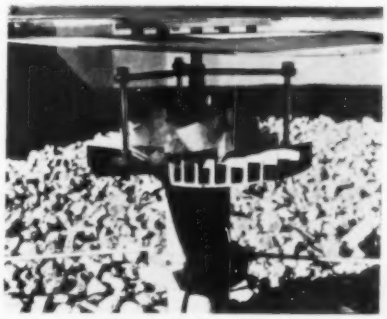
Following sedimentation in the primary tanks, the clarified sewage flows to the wet well of the pumping station. This well is 24 feet 4 inches by 5 feet 4 inches in surface area, with a depth of 5 feet below the invert of the inlet pipe. The floor is sloped steeply to a sump 10 feet by 1½ feet in plan from which the pumps take suction.

Three 4-inch Yeomans horizontal motor-driven centrifugal pumps designed to operate at 1,150 rpm with a maximum head of 21 feet are provided. Two have a capacity of 170 gpm each, and one is rated at 350 gpm. Suitable electrically controlled valves provide for a return of filter effluent to the primary tank for recirculation when the rate of flow to the filters falls below a pre-determined amount. The sewage flows are measured through an orifice meter on the pump discharge line to the filter, and the return flow for recirculation is measured in a Parshall flume. In addition to the sewage pumps there is a sludge pump installed for pumping secondary settling tank sludge. This pump has a capacity of 50

Handling Filter Stone



Placing Filter Stone



The Sprinkler Head

Ice on Filter Wall

Head in Action

gpm and a suction and discharge diameter of 4 inches.

The sewage pumps discharge through a 10-inch diameter main into a control box between two filter units. From this box the flow passes to either or both of the filter units. A 6-inch overflow line limits the amount of flow which the filters can receive. Stop planks are arranged so that the flow to either unit can be shut off. Eight-inch diameter feed lines lead to the Lakeside Engineering Co. distributor mechanisms on each filter. The filters are each 30 feet in diameter with an 8-inch depth of blast-furnace slag filter media. The specifications called for the following gradation of media:

100	per cent	passing	3½	inch	mesh	
95-100	"	"	"	3	"	"
0- 15	"	"	"	2	"	"
0- 2	"	"	"	1½	"	"

American Vitrified Products Co. Aerodrain filter blocks were used as underdrains discharging into a trapped collecting channel 12 feet wide and of variable depth. Two motor-driven ventilating fans capable of drawing air through each filter at a rate of 700 gpm were installed. The motor-driven disc distributors are designed to apply the sewage evenly over the entire filter surface at a rate of not less than 150 gpm and not more than 350 gpm. The concrete walls around the filter were carried 5 feet above the top of the filter media to prevent spray from being blown from the filter.

A 12-inch pipe carries the filter effluent to the final settling tank, which is 60 feet long and 12 feet wide with a water depth of 5 feet 8 inches. This provides a theoretical detention period of 130 minutes with a flow of 0.35 mgd. The tank is equipped with a mechanical sludge collector, which delivers the sludge to two hoppers 2 feet 9 inches deep at the inlet end of the tank. H-shaped V-notched weirs extending along each side wall for a distance of 36 feet from the outlet end, and across the tank about 12 feet from the outlet end, take off the effluent and discharge it through a 12-inch pipe to the main outlet sewer. The 6-inch sludge withdrawal piping connects either to the sludge pump or to the Parshall flume conduit for return to the primary tank.

A by-pass arrangement permits isolating the plant entirely following primary treatment or following filtration. The painting specifications stipulated that the concrete surfaces in the wet well, final tanks, filter, channels and control boxes should be given two coats of waterproof, acid-resistant coal tar pitch enamel. All metal work at the plant is painted with an aluminum paint.

Sludge Disposal

The sludge digester has a capacity of 16,250 cubic feet, equivalent to 2.5 cubic feet per capita for a population of 6,500. As previously stated, this digester is one of the original settling tanks rebuilt for this service. It is 62 feet 6 inches by 20 feet in plan, with a depth of 12 feet 4 inches. Two 2-inch plank baffle walls 52 feet long extend from top to bottom of the digester and from alternate ends, so that the sludge travels three times the length of the tank from the point of inlet to the point of overflow draw-off. The hydraulic gradient is so arranged as to submerge the bottom of the roof slab. Three gas domes, provided with water seals and equally spaced along the longitudinal center line, provide for the collection and removal of gas. An 8-inch sludge draw-off line leading to the sludge pump from near the bottom of the digester is provided for removing digested sludge. A 1½-inch pipe line carries hot water to the coils on the walls for heating the digester. Digester gas is burned in an Ideal No. OG-6 boiler, and auxiliary heat is available from a coal-fired boiler.

The sludge is dried on glass-covered sludge drying beds, arranged in two units, having a combined area of 2,960 square feet. The beds are provided with 6-inch tile underdrains spaced 9 feet 2 inches on centers and covered with three layers of gravel graded from 5¾ inches to 1½ inches, 4¼ inches to ¾-inch, 4⅛ inches to ¼-inch, and all covered with 5 inches of sand. The sludge-bed drainage is returned to the effluent line from the primary settling tank leading to the pumps.

Plant Results

The rebuilt plant was placed in operation in October, 1939, and has been going through the usual adjustments encountered in the initial stages of plant operation. During the month of December the plant treated a total of 8,556,000 gallons of sewage averaging 276,013 gallons per day. An average of 35,306 gallons per day was returned through recirculation. The total power consumption for the month was 4,335 kwh, which cost a total of $9.79 per million gallons of sewage treated.

The raw sewage averaged 308 ppm in suspended solids with the primary effluent, filter effluent and final effluent containing 57, 58 and 31 ppm respectively. Similarly, the raw sewage had an average 5-day B.O.D. of 209 ppm, the other units being 109, 66 and 52 ppm respectively. These results are the averages of determinations made on four days during the month.

During the months of January, February and March, 1940, an average of 18 determinations on day-flow showed the following averages in suspended solids in ppm: raw, 174; primary effluent, 57; filter effluent, 62; and final effluent, 33. The average 5-day B. O. D. during these 3 months was as follows: raw, 146; primary effluent, 96; filter effluent, 55; and final effluent, 41.

The total amount of sewage treated in the plant in the months of January, February and March, 1940, was 34,146,000 gallons. A total of 4,815,000 gallons was returned through recirculation. The rate of application to the filters in mgad was as follows: maximum, 26; minimum, 6.4; and the average, 15.9.

The total cost of power and lighting during the above months was $244.09, or $7.15 per million gallons of sewage treated.

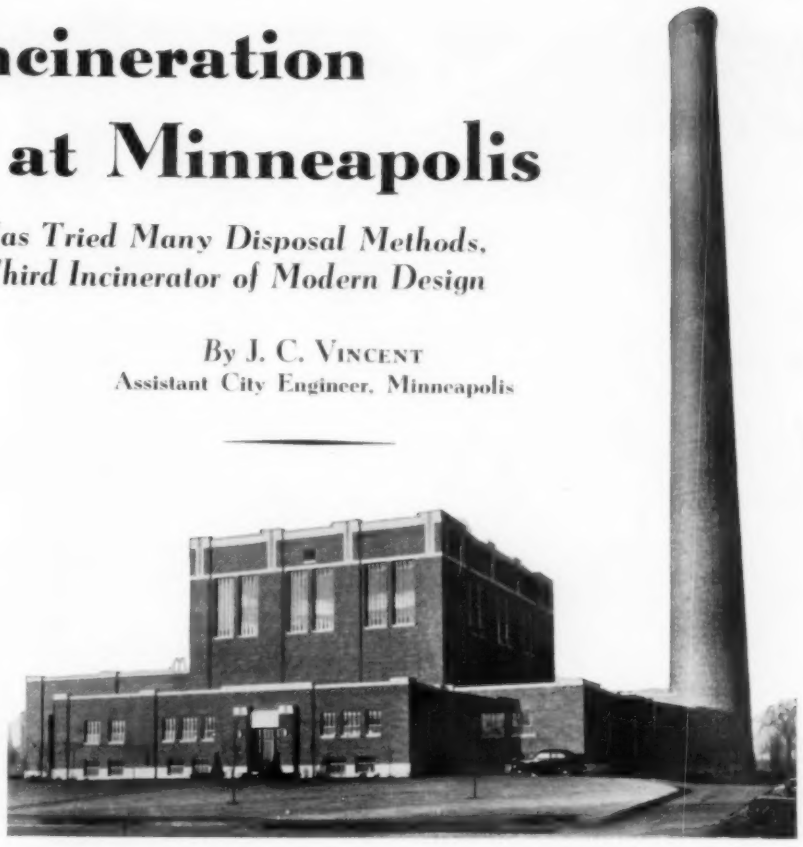
The plant is operated by Ercell J. Doane, Plant Superintendent, with technical supervision by E. F. Eldridge of Michigan State College.

THE AMERICAN CITY is not copyrighted. Please give credit when quoting from it.

Refuse Incineration at Minneapolis

The Flour City Has Tried Many Disposal Methods, and Now Has a Third Incinerator of Modern Design

By J. C. VINCENT
Assistant City Engineer, Minneapolis



THE city of Minneapolis through its Health Department took over the collection and disposal of household garbage and refuse as a municipal service in 1901 to remedy and control the unsatisfactory sanitary conditions existing at that time. Two 50-ton Decarie incinerators were built, housed in a wooden shed, on the north side of the city, and collection was made by horse-drawn wagons. It was soon found that the incinerating plant was located too far from the district where the garbage was produced, requiring too long a haul. A transfer station was established close to the center of collection in 1907, and the garbage was reloaded onto railroad cars to decrease the long haul by team. In 1908 a regulation garbage can was adopted and an ordinance was passed requiring that garbage be drained and wrapped.

This utility service was transferred to the City Engineer's Department in 1915. The old incinerator was increased in capacity and the collection system motorized. The rehaul from the transfer station was made by tractors and trailers instead of by rail.

The 1924 Incinerator

About 1924 the maintenance cost of the old plant became prohibitive and its capacity was insufficient to care for the increasing volume of refuse. The Riverside Destructor with three 70-ton furnaces was built in the north section of the city on the Mississippi River, and placed in operation in 1925. This incinerator only partly solved the collection problem from the south and west areas of the city, since the wastes from these sections had to be hauled through the downtown section to the north side.

About eight years ago it became evident that the Riverside Destructor would be overloaded during the peak months of August and September, even with the plant operating 7 days a week and 24 hours a day. Further, the hauling of garbage from the points of collection to this one incinerator became increasingly difficult and uneconomical. Studies showed that an additional incinerator located in the south central area in the heavy industrial zone and adjacent to a railroad right-of-way would be the best solution. This would permit proper service to the householder, eliminate the rehaul from the transfer station through the downtown area to the incinerator at the north side, and would also permit operating economies in both haulage and incineration.

The South-side Incinerator

In the fall of 1938 the City Council ordered the City Engineer to design and build a destructor on the south side with the aid of a PWA grant. The design and specifications were prepared entirely by the engineering and architectural force of the City Engineer's Department. A site was finally chosen within the heavy industrial district defined by the City Planning Ordinance and on a siding of the Milwaukee railroad. The plant was placed in operation November 20, 1939, and the first several months of operation indicate very efficient operation.

The building housing the destructor is a steel frame with brick and tile walls, precast concrete roof slabs and concrete foundation walls. The building is 145 x 108 feet in plan, of which 88 x 20 feet is devoted to the office and men's sections. The site has a 207-foot frontage on 20th Avenue South, and is 260 feet deep to 19th Avenue South. This permits a generous setback of the building with a front lawn and landscaping. The plant is equipped with two 100-ton furnaces, giving a total capacity of 200 tons per 24 hours, and has provision

The Charging Floor, Crane and Pit at the New Southside Incinerator, Minneapolis

for the installation of an additional furnace and equipment for an ultimate capacity of 300 tons.

Garbage and rubbish are now collected in new enclosed garbage trucks, the fleet consisting of 35 units of 8 cubic yards capacity each. The trucks enter the plant through the rear door and are weighed on a platform scale, and the load is then dumped into the storage pit. The refuse is reclaimed by a 2½-ton Owen clamshell bucket, operated by a 3-motor, 60-foot span Harnischfeger crane, and is elevated and dumped into the feed hoppers on the upper floor.

Beaumont gates, 3 x 4 feet in area, and operated by pneumatic pistons under 45 pounds per square inch air pressure, open to drop the garbage onto the furnace grates. The high-temperature furnaces produce from 1400 to 1600 degrees F. when burning garbage and rubbish of less than 70 per cent moisture. Above this moisture figure additional fuel in the form of coal is used. The hot gases pass through a Nichols preheater and thence through the flue to the radial brick stack. The preheater reclaims some of the heat from the waste gases by heating the air for combustion to 400 to 500 degrees before it is delivered through the grate. This results in a higher combustion rate and a reduction in the amount of fuel which may have to be added.

The ash resulting from the combustion is dropped into pits below each furnace and carried by a trough conveyor to an ash truck or gondola car for final disposal as ash fill.

The 180-foot radial brick chimney is 10 feet 4 inches in diameter at the bottom and 8 feet diameter at the top on the inside. The Minneapolis type furnaces, designed by the author, have 136 square feet of area per furnace, and the combustion chamber measures 17 x 8 x 12 feet.

The cost of the plant complete with the site is as follows:

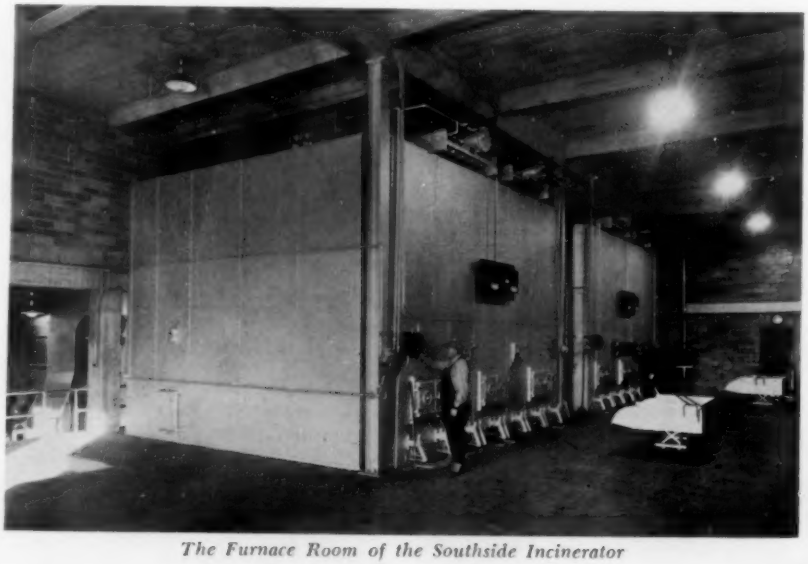
Land	$ 8,500
Stack and foundation	21,700
Building and equipment	205,000
Engineering and inspection	8,000
Present plant	$243,200
Future third furnace	28,000 estimated
Final plant cost	$271,200

This gives a unit cost of approximately $900 per ton capacity for the plant when completed as a 300-ton plant. With the Riverside Destructor having a capacity of 210 tons, and the new Southside Destructor with a future capacity of 300 tons, it is believed that the city can be served for a period of at least ten to fifteen years without additional plants. The new Southside Destructor is operated under the direction of Fred T. Paul, City Engineer, with Carl O. Nygard in charge as Chief Operating Engineer, Incinerator Division.

Summer Program in City and Regional Planning

A summer course in City and Regional Planning is again being offered under the joint sponsorship of the School of Architecture of the Massachusetts Institute of Technology and the American Planning and Civic Association, July 8 to 26. It is designed to meet the needs not only of present and prospective students of planning and related professions, but of technicians in practice and members of city and state planning boards or housing authorities. The course will be held at M.I.T. and will be under the direction of Prof. Frederick J. Adams and Prof. Flavel Shurtleff.

The Program will be divided into four sections: City and Regional Planning; Planning of Legislation; Planning Administration; Techniques of Planning. The fee for the entire Program is $55; for the section on City and Regional Planning, if taken separately, $25; and for the other three sections $10 each, in addition to a registration fee of $5. Applications for participation in the Program should be sent to Prof. Frederick J. Adams, M.I.T. School of Architecture, Cambridge, Mass., not later than July 1, 1940.



The Furnace Room of the Southside Incinerator

Stratford Collects 80 Per Cent of Old Arrears

By Allen B. Vermilya
Chief Clerk, Finance Department,
Town of Stratford, Conn.

SINCE I have engaged in municipal accounting—and I suppose since the beginning of time—there has been a great hue and cry from the taxpayer whenever the question of arrears taxes was brought up. The usual complaint—

"I didn't know about it."

"The last bill you sent me didn't show it."

"Why don't you send out bills?"

In our case, where the tax rate is set about the first of March and then approximately 15,000 assessments have to be figured and billed before March 31, the only possible solution seemed to be to indicate on the current bill that there were arrears unpaid. To do this it was necessary to set up a unit tax ledger listing all the arrears.

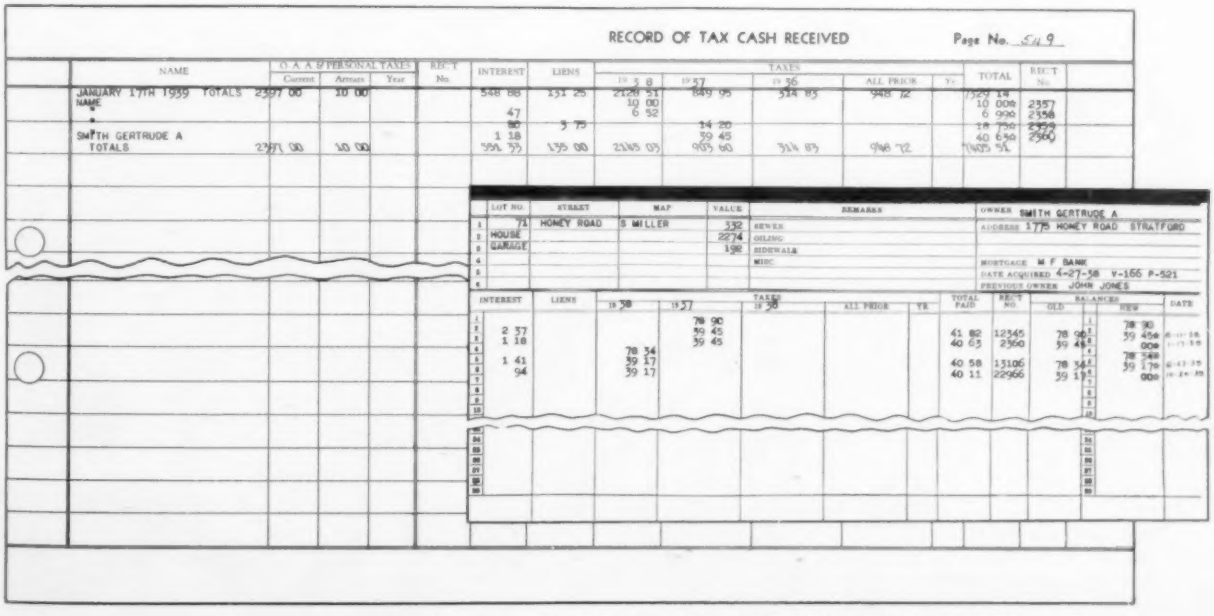
The first step was to set up tax control lists by years, listing the names of the delinquents and the amounts unpaid. The next step was to list and analyze *every* unpaid tax. After this was done, the information was transferred to the individual tax ledger cards, which carry these arrears and the balance unpaid against every parcel for each year and for all the years.

While this tax searching was in process, we designed our individual tax ledger and daily cash sheet for use with a tax accounting and billing machine.

Aid to the Assessors

It has been the custom for our Assessor's office to draw off the changes in ownership weekly and mark the current abstract accordingly. After October 1, the assessment date, new assessment cards would be made up for replacements as needed. If separations were necessary, they were generally made after October 1. New buildings were generally assessed as of October 1, and altogether our normally adequate force was overburdened for about four months at this time of the year. The rush and pressure to complete the work by January 31 did not tend to reduce the amount of human errors. Most of this pressure has been eliminated. When changes in ownership are drawn off by the Assessor's office, one or two ledgers, depending on whether all or part of the property owned by the grantor was sold, are made up by the assessors. Any separation needed is made at once, and the ledger or ledgers then go to the Tax Department, which immediately makes the necessary separation of any unpaid taxes and files the new ledgers, the old ledger being placed in the "dead file."

The addition of a building to any lot is taken care of by having a notice forwarded to the Assessor's office by the Engineering Department when the building permit is


RECORD OF TAX CASH RECEIVED Page No. 549

NAME	O. A. & P. PERSONAL TAXES Current	Arrears	Year	REC'T No.	INTEREST	LIENS	TAXES 19 3 8	19 37	19 36	ALL PRIOR	Yr.	TOTAL	REC'T No.
JANUARY 17TH 1939 TOTALS NAME	2397 00	10 00			548 88	131 25	2126 91	849 95	514 85	948 12		7529 16	
					47		10 00					10 00	2357
					80	3 75	6 52	14 20				6 990	2358
SMITH GERTRUDE A					1 18			39 45				18 750	2359
TOTALS	2397 00	10 00			596 33	135 00	2143 43	903 60	514 85	948 12		40 690	2360
												7609 16	

LOT NO.	STREET	MAP	VALUE	REMARKS
71	HONEY ROAD	S MILLER	532	SEWER
HOUSE			2274	CEILING
GARAGE			198	SIDEWALK
				MISC

OWNER SMITH GERTRUDE A
ADDRESS 1775 HONEY ROAD STRATFORD
MORTGAGE M F BANK
DATE ACQUIRED 4-27-38 V-166 P-521
PREVIOUS OWNER JOHN JONES

INTEREST	LIENS	TAXES 19 38	19 37	19 36	ALL PRIOR	YR.	TOTAL PAID	REC'T NO.	BALANCES OLD	BALANCES NEW	DATE
			78 90							78 90	
2 37			39 45				41 82	12345	78 90	39 45	6-27-38
1 18			39 45				40 63	2560	39 45	000	11-15-38
		78 34								78 34	
1 41		39 17					40 58	13106	78 34	39 17	6-27-39
94		39 17					40 11	22966	39 17	000	11-24-39

The large daily cash sheet is posted at the same time the individual ledger cards are posted

PHOTOGRAPH BY A. B. VERMILYA, JR.

Stratford's Posting Machine

issued. This notice shows street, map, lot number and estimated value of the building. When the building is completed, and a certificate of occupancy is issued, a second notice to this effect is forwarded to the Assessor and the assessment is made at once and added to his records and to the tax ledger. Thus, on October 1, it will only require assessments on the incomplete buildings as shown by the first notice.

Our assessors have always verified their current list by checking the last current list, but in the case of land developments it is all too easy to lose or gain one or more lots. We now verify our current assessor's list against our tax ledgers, providing an accurate check, because the assessors and the tax office verify the separations as they occur. Furthermore, as the state law requires that the abstract on October 1 remain until the next October 1, it is never up to date, but the tax ledgers are always up to date.

Heretofore, if a taxpayer owed a sewer or other assessment, we had no way of telling by the tax ledger, and it has happened that the assessment liens have become outlawed although taxes were only slightly delinquent. We have stopped this.

Under the old system we had to type the cash sheet and then post the individual ledgers by hand. We now post to the ledgers and write the cash sheet in the same operation by Elliott Fisher accounting machine. This also eliminates error in the posting. Totals are taken and posted at the end of the day and compared with our National Cash Register tape and actual cash on hand, making a three-way check. Every receipt goes through the cash register and is automatically numbered, and the number posted on the ledger.

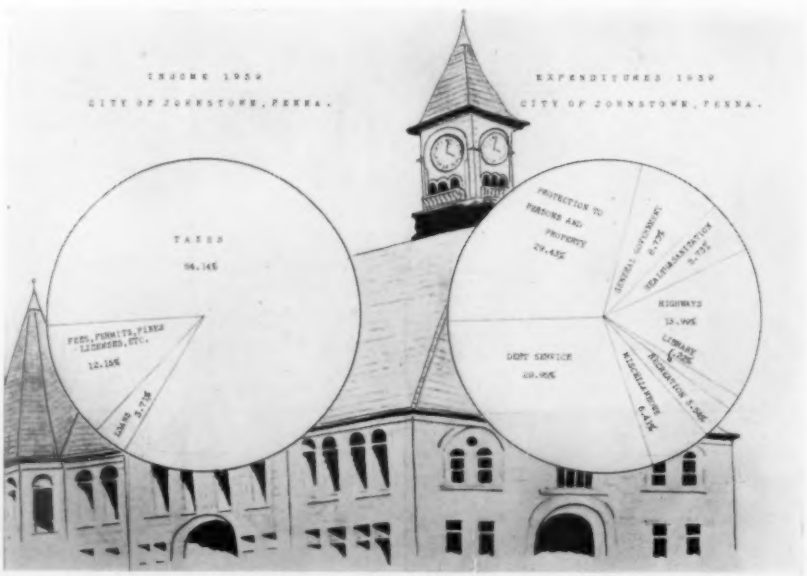
Speed, Accuracy, Efficiency

We now tell at a glance the amount of unpaid taxes, if any, on any piece of property, whereas formerly it took from 2 to 30 minutes to obtain this information—sometimes of doubtful accuracy.

We had our first real opportunity to try the new system under pressure last October when the second half of the taxes on the 1938 list was due. In the last three days of that month there were over 2,000 payments made, and yet our normal force of three persons accepted the payments, receipted the bills, made change, and did the posting. The records were completely posted by 2 P.M. November 2. Before that it had been the 10th or 12th of November before we could do the same work *with additional help.*

When we started developing the system, there were unpaid taxes amounting to $450,000 in arrears as far back as 1906, and unpaid assessments 17 years old. By the end of this fiscal year (March 31, 1940) the unpaid taxes amounted to less than $90,000 and do not date earlier than 1923, and the assessments are less than ten years old.

A Graphic Presentation of City Finances



DRAWN AND COMPILED BY M. M. CHUDY, CITY ASSESSOR, JOHNSTOWN

I Like to Pay Taxes

Where Could I Buy More Benefits for a Similar Expenditure?

By Herbert Coggins

I JUST got my new tax bill. The combined city and county total for the year is $190.38. "The tax-eaters!" growled my neighbor who had come on the same errand. "Tax-eater" was his new epithet for the city and county employee. Heretofore he had referred to them more prosaically as "loafers." Whether just or not, he pricked my curiosity as to what I was getting for my money. After all, $15.86 a month is quite an expense just for staying in a house I had bought and paid for.

The city taxes were ten dollars lower than the previous year. The county taxes were higher by a slightly greater margin. For some time I have felt that the two governments were conniving against me, for my own peace of mind. One year the city tax is lower and the news thereof is heralded in the local press without any reference to the increase in the county budget. The next year the county is the low rate and gets credit in the same manner. Tricky, you would say? No, just sensitive. Tax collectors are like other business men. They are trying to make bad news look pleasant.

Anyway, let's take a ledger sheet and charge taxes $15.86 a month and see what I get for it.

Streets and Sewers

First of all, on two sides of my home is a nice, clean, wide asphalt street with a concrete base. Aside from my taxes I have not spent a cent on it; but it is in better shape today than when my house was built twenty years ago. More than that, I have the use of tens of thousands of miles of similar paving all paid for by municipal, county or state tax money and extending all over the state. In not very many hours I can drive to a sunny palm- and cactus-studded desert, or to snow-clad peaks, without getting off this same asphalt ribbon.

I know my street has real value for me, but how am I to figure it? As a comparison, I pay $4.25 a month for my telephone—and it is worth it or I wouldn't pay it. But if I had to surrender my telephone or the right to use the street, I would retain the street. Anyway, let's credit the street department with $4.00 a month to offset my $15.86.

Sewerage is the same story. I should hate to do the work the sewer pipes do for me for anything less than an equal amount. But let's not be sentimental. We'll offer the tax-eater $3.00 a month. He'll accept it.

Fire and Police Protection

A few paces from my front door on a post is a little red box. It can bring the nearest fire engine to my door in three minutes, and a dozen others if I need them. I have never had to use it, but I know the service it has given others has protected me. In fact, the efficiency is so well thought of that an eastern insurance company has been betting on my fire service for a score of years and has been collecting its winnings from me in the form of premiums during all that time.

Nevertheless, I like the arrangement as a whole, and I much prefer it to dickering with some rugged individual when the house is on fire, either on a competitive bid or a cost-plus basis. Even if I never use it, I wouldn't part with the little red box for $4.00.

A blue-coated individual ambles about the neighborhood of my home several times a day. Sometimes there are two of them, and—worst of all—they travel about in V-8's. They are not worried-looking men like taxpayers, and apparently are not aware how expensive and useless they are in my neighbor's sight. They have a radio in the car to pick up messages from the central police station, and one time it is recorded that a message fell on the blank air because all the radios were tuned in on the world series. That has been corrected, and baseball and public safety have been synchronized.

Twice I have called on them. Once in a case of sickness, when an unknown neighbor's dog that kept the invalid awake through torturous hours was silenced without any resentful aftermath. The other time was in my absence when an uninvited guest made his exit through a rear window of my house, having been disturbed by a nosy cop. He took with him a few dollars in trinkets and change. Two suitcases of rather worth-while furs and clothing were left beside the window, thanks to the inopportune glare of the officer's flashlight. On my homecoming the unworried official dusted some white powder on the door-knobs and pressed pieces of paper on them in a ridiculous manner. He even took my thumbprint at my request. Then, to show off, he asked my wife to go in her room and hide a ring where it would be safe from a burglar. A minute later he followed her, ran his finger around an upper molding and presented the ring to a rather chagrined lady with the remark "That's where they all hide 'em." Later the burglar was caught and identified by the finger record from my door-knobs.

Not very much return, you will say, for years of taxpaying. Still, it is worth something; for, one time when I thought I had something worth a burglar's attention, I, with others, paid a private watchman to walk about the neighborhood at night. For this service he contracted with me at $1.00 a month, and the fact that I saw him thereafter only when he collected the dollar doesn't convince me that he wasn't worth it. On the same basis

I believe that two policemen day and night, with the facilities, system and quick transportation, are worth $3.00 at least. After all, their real value was that I didn't have to call on them. Credit taxes $3.00.

Facilities for Education and Recreation

A nice walking distance from my house is a pleasantly planned structure surrounded by a yard and playground equipment and edged with shrub gardens. It is for the primary and grammar grades, with the high school within another short distance. While not new, they are both modern and light, and seem to reflect health and happiness, so far as school and children can be made into a harmonious combination. I will waive the extravagant claims for the value dispensed within, but it suffices that the buildings are equipped for study and recreation beyond anything I encountered in my own school days. As nearly as I recall, it cost my parents between twenty and thirty dollars a month to keep me in a private day school, which from the standpoint of investment did not compare with the tax-supported institution. There were six of us of school age in the family, but I won't be generous enough to throw the other five onto the taxeater's side of the scale. But in view of the fact that any sum of money meant more at that time than at present, to credit the city and county with anything less than $20.00 would be cheating.

But before this goes too far, let's see what I get for my money:

Streets	$4.00		
Sewers	3.00	Tax by	
Fire	4.00	the	
Police	3.00	month	$15.98
School	20.00		
	$34.00		$15.98

Good business suggests that we don't follow this line to its finish. After all, fairness is one thing and being quixotic is another. I wouldn't tell the taxers they are giving too much for the money, any more than I would intimate to the plumber that he is entitled to more pay for hiding from his boss in my bathroom.

Other Advantages for the Taxpayer

But confidentially, just for the comfort of people like myself, I can't refrain from mentioning the colossal university adjacent where folks of even my vintage can accumulate hundreds of dollars' worth of education in excess of its trifling costs.

Personally, I can't claim much return from the three or four public libraries available to me. But the experience of my friends who,

COME TO STINGYVILLE
ITS TAX RATE IS LOW-NONE OF THE TAXPAYERS' MONEY IS WASTED ON FRILLS-WHAT WAS GUD ENUFF FOR OUR ANCESTORS IS OK FOR US. WE BELIEVE IN SAVING MONEY-NOT WASTING IT.
TAXPAYERS ASSN.
COME TO PROGRESSTOWN
YOUR TAXES WILL BE HIGHER
BUT CONSIDER WHAT YOU GET
WELL-PAVED STREETS
GARBAGE COLLECTION
FIRE PROTECTION
FINE SCHOOLS
PARKS AND PLAYGROUNDS
CHAMBER of COMMERCE
JUST MARRIED
ART KNOERZER

DRAWN FOR THE AMERICAN CITY BY ART KNOERZER

Which Town Will They Choose for Their New Home?

through the private lending libraries, have entered the race with the present-day publishers' output, proves to me that they offer a decided rebate in tax money. And when I recall the dividends that Jack London made one of these same institutions pay him finally, I have to list public library facilities as one of my lost opportunities.

Not being an esthete, I can't properly estimate the free art galleries, museums, a zoo, city parks with free band concerts, a ten-cent symphony, together with stadiums, baseball grounds, tennis courts, aquatic parks, swimming pools and picnic grounds with tables and grills. And I realize, of course, that some services such as I get are not available for taxpayers in smaller or poorer communities.

Services I Don't Want to See or Use

I admit there are a few items where the tax-eaters have me over a barrel. In the first floor of the city hall there is an enterprising and adequate city jail with some outstanding blue-coated business-getters. It cooperates with and supplements an ample state penitentiary whose requirements are not hopelessly above the average citizen. We have an up-to-date emergency hospital served by a smooth-riding conveyance, and a mammoth county hospital that is the last word in everything that I don't want to see or use—except that it is not called a county hospital, since that name is thoughtfully reserved for a series of sunny homelike buildings that once upon a time would have been called a poor farm. Besides this, a certain amount of relief not supplied by the National Government is available to those to whom chance has not handed out the best of deals. But, as I have said, I am reconciled not to collect on these.

A Camp in the Sierras

Perhaps it is bravado to say I like to pay taxes. But I prefer it to paying the hidden and unknown value of my auto repair bill, or my gas and power bills when I compare them with those of some other cities. And when I spread the facts out before me, I feel the tax-eaters are doing a good job of buying with my money.

Another thing I almost forgot. Seven thousand feet up in the Sierras, in what to my partly traveled experience is the most attractive and inspiring spot in America, is a recreation camp. It was instituted by my neighbor's tax money and mine. Here I and any other citizen can obtain good food, sleeping accommodations and entertainment at about half of its normal cost to us. Perhaps that is why I am not excited about my tax bills. For I have long ago made up my mind that when the tax-eaters start taking a page of procedure from the private corporations, and send me monthly bills for street, sewer, police, fire, school, library, recreation, hospitalization and relief services adorned with such rubber-stamp suggestions as "Take it or leave it" or "Pay up or else," I will hie me to their Sierra camp and eat and sleep and loaf below cost until I get even with them.

Broadcasting Photo Circular Finds Murderer

ABOUT noon on a day in last March, a young man reported the finding of a dead body in a gully off the roadway of upper Park Avenue in Bridgeport. The Medical Examiner was summoned, and upon the arrival of police it was learned that death had been caused by two revolver shots, one through the head and the other through the chest. At the city morgue a minute examination of the clothing was made; fingerprints were taken; a photograph and a death-mask were made. There was nothing on the person of this man to reveal his identity.

The fingerprint classification was flashed to the Federal Bureau of Investigation at Washington, also to New York City, since the Bridgeport files did not reveal any identification. It was felt that the victim was involved as a criminal and had been "taken for a ride." The FBI and the New York City Police Department promptly reported no record. This was discouraging, for great confidence had been placed in the fingerprints as means of identification. Much publicity was given in the local press to the finding of the body and the cause of death, but no one came forward with any information whatsoever. The immediate problem was not who was the murderer, but who was the victim. In the belief that by establishing his identity, an investigation to learn who killed him would probably be successful, it was determined to broaden the inquiry.

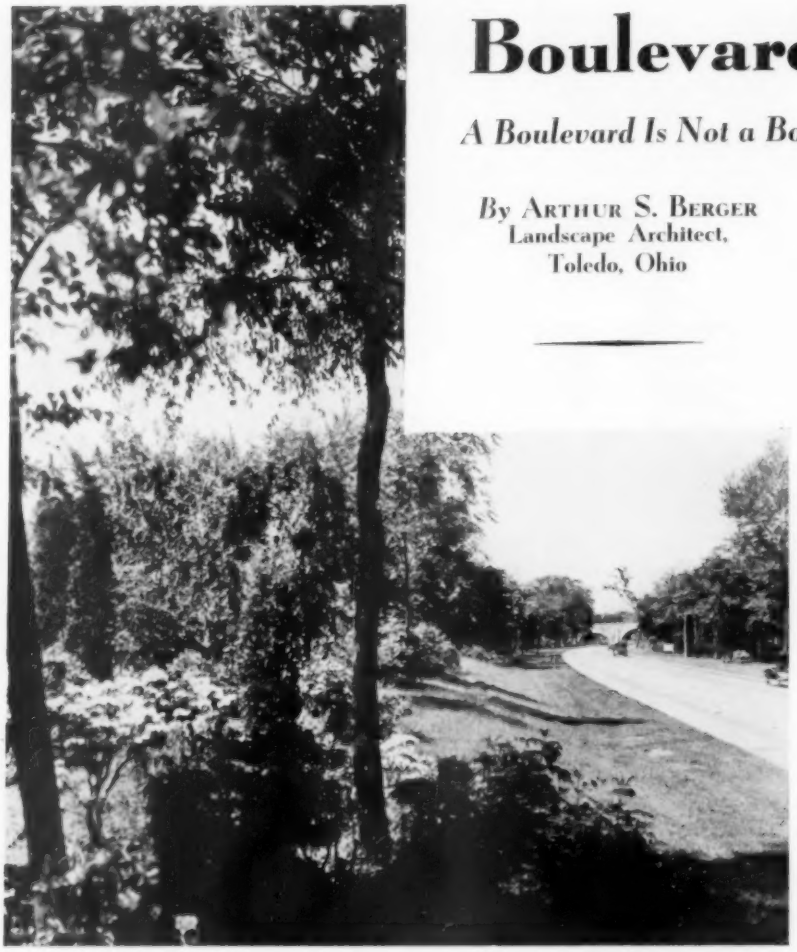
We decided to put to use a new Duophoto machine which had been placed in our hands only a week or two before this crime. A circular was prepared setting forth the facts concerning the finding of the body; its description and photograph, fingerprints, clothing, laundry marks, etc. Two hundred copies of the circular were made by the Duophoto machine, which reproduces photographically in a few seconds, without requiring a dark-room or technical skill, and at small expense. The copies were mailed to all surrounding towns and cities.

A few days later a telephone call was received from the Chief of Police at Newburgh, N. Y., saying he had put the circular on the bulletin board at Headquarters, and two of his officers had identified the photograph and the initials on the victim's handkerchief. Captain Bray and Sergeant Brennan of our Department sped to Newburgh, verified the identification, and made an exhaustive investigation of the man's friends. Within two days, our officers returned with the murderer—who has made confession of the crime.

The case was a typical "murder mystery," and its investigation required most of the scientific aids employed by police — camera, microscope, fingerprinting, ultra-violet ray light, teletype, radio, ballistics, and—not least—the Duophoto, which efficiently, economically, and expeditiously led to the identification of the victim, which in turn led to the apprehension of his assailant.

CHARLES A. WHEELER,
Superintendent of Police.
Bridgeport, Conn.

April 4, 1940.



Boulevard Building

A Boulevard Is Not a Boulevard Until It Is Planted

By Arthur S. Berger
Landscape Architect,
Toledo, Ohio

HOWEVER beautiful the curves of a road may be in themselves, whether the lanes of traffic are separated by an intervening stretch of land or just a solid roadway, the area in question cannot truthfully be called a "boulevard" until it is landscaped. The word "boulevard," meaning a wide street planted with trees, implies in the public's mind the entire planted area through which the road passes and not just the paved road itself. The planting of trees, the establishing of green lawns, in short, the park-like aspect, is what distinguishes a boulevard from other thoroughfares.

As motorists are attracted by the natural surroundings of boulevards, they tend to use them more for pleasure than for convenience. The beauty of their planting serves as an incentive for a drive, giving relaxation and recreation, increasingly needed in the quickened pace of life for city dwellers. Without boulevards or planted roads within a city, drivers would have to travel greater distances to get out into the country for the lift afforded by a brief contact with nature.

Beautification of a boulevard is a constructive work project which repays the effort a thousand-fold. Landscaping does not just happen. It must be planned. Certain types of treatment in landscaping such thoroughfares may be suggested, although there are no hard-and-fast rules to bind the efforts of the planner.

Shrubs or Trees?

Shrubs might well be dispensed with entirely or at best used very sparingly, for they are out of scale and diminish the broad expanse which a boulevard should achieve. Used promiscuously, shrubs are apt to become a traffic hazard, since the thick foliage is carried at eye-level and obstructs vision. Besides, shrubs add to the upkeep cost, require trimming and cultivation, or, if neglected, they become unsightly.

Trees, on the other hand, require no care after becoming established. They look better rising directly from the grass, with no artificially cultivated area about them. Trees should, in my opinion, be used extensively, and their location carefully studied. A cooling effect will come from tall trees by the shade they cast across road and grass. Their foliage is carried high and does not obstruct the driver's view, nor do the trunks constitute a visual hazard. Because trees grow large, they are in proportion to the scale of the boulevard and add to the feeling of great expanse by introducing a third dimension, height, which is important in the appearance of the surroundings.

The type of trees chosen for planting along a boulevard should be largely the kinds that are native in the region where the road is located. For ease of transplanting and to minimize the loss of trees from this process, it is wise to get nursery-grown trees with good root systems. Some cities maintain their own tree nurseries for this purpose. Trees which are indigenous to the climate will do better and look more at home than unusual varieties. The more the finished product looks as though it was natural—not planted by man—the more successful will it be. The illusion of the drive having been laid out through an existing growth of trees is ideal.

Trees form a most perfect foil for the built-up city by affording a serenity that contrasts sharply with the more solidly built-up areas which other city highways serve.

High-Headed Trees

Elms, maples, many varieties of oaks, sycamores, hickories, locust, and hackberries are all good trees of the high-headed type. Where the right-of-way is wide enough, groupings of these trees are more

effective than straight row planting.

In places where narrowness of right-of-way precludes this treatment, rows of trees will be necessary and afford a different type of planting arrangement. To have straight rows over the entire length of a boulevard would be a grave error resulting in monotony. High-headed trees can be used effectively in the central parking areas between the two traffic lanes, as well as bordering the road.

Low-Headed Trees

Native hawthorns in varieties are considered among the best low-headed trees for screen plantings—planting to hide unsightly objects like grade-separation abutments, bridge approaches, and rough fields. Outstanding among these are Crataegus crus-galli, with shiny green leaves. White flowers in early spring are followed by red fruit profusely produced in the fall, giving color well into the winter. Another excellent variety of hawthorn is Crataegus mollis, whose large red haws are produced earlier in the season. This is a prolific tree whose appearance in August will not soon be forgotten. Other good low-headed trees include the Judas tree (or redbud), mountain ash, and flowering crabapple.

All the low-headed trees should be planted near the outside of the right-of-way, with perhaps an occasional group or specimen nearer the highway. Interest in such trees lies in the color of the bloom or fruit and the variety of plant forms so introduced. Such trees are shapely and assume a pleasing form as they develop and mature.

Where an unsightly view is close to the boulevard, as in locations where railroad tracks run parallel to the road, such low-headed trees act as effective screens. This type of tree, however, should not be used in the area separating the lanes of the highway, for its low foliage will cause a traffic hazard by obstructing the view. Furthermore, in such a location trees which carry their foliage low tend to detract from the breadth of the boulevard, an important feeling to create.

Vines

A few places occur in most boulevards where there are steep slopes between the roadway and the edge of the right-of-way. These banks may in some instances be too abrupt to grow grass. Turf on the sides of sharp inclines is not economical to maintain. It is better to use vines as ground cover in those places. Any of the scrambling or trailing roses are good for this purpose, particularly the native Rosa wichuriana. Matrimony vine, bittersweet, and Virginia creeper are also strong-growing vines well adapted for planting on banks. Best of all is the evergreen honeysuckle (Longicera hallina), because of its strong growth and the fact that it retains its foliage all winter, giving a pleasant appearance twelve months in the year. Sturdy vines like those suggested have penetrating root systems which will check side-hill erosion and prevent soil from washing away.

Grass

Perhaps one of the most important items in landscaping a boulevard is the grass. A good turf can add substantially to the total impression, while a poor stand of grass, leaving bare spots or empty spaces, may spoil the entire effect. It is a mistake to plant varieties which will require any great upkeep to give a good appearance. It is far better to use strong-growing varieties which will take hold and grow well in competition with weeds and other materials. Good, sturdy, permanent grasses should be used which will withstand droughts and eventually fill out into a turf that crowds out weeds. The grass may well be of low-growing varieties which will look well even though cut only a few times a year. Any grasses which are successful in parks without much maintenance should prove satisfactory along a boulevard.

Summary

No boulevard is complete unless it is landscaped like a park. It must have a covering of green turf from which rise trees to give shade. These trees should be planted interestingly to appear to be natural groups in some sections. Straight rows should be used only where narrowness of the right-of-way forces this expedient. All unsightly areas should be screened by judicious use of both high-headed and low-headed tree varieties. Few shrubs, at best, should be used. Beauty of plant forms and variety is achieved, other than where screening is necessary, by groups of low- and high-headed trees.

The scene on the Hutchinson River Parkway, opposite, and this on the Bronx Park Extension near Croton Lake Bridge of the Westchester County Park System, N. Y., are excellent examples of good boulevard landscaping

Many Improvements Aid Morganton, N. C.

Residential Building Increasing, Insurance Rates Lowered, Sanitary Conditions Improved by Program

By CHESTER F. LEWIS
City Manager and Engineer

BY TAKING full advantage of Federal funds made available to municipalities by the PWA and the WPA, Morganton has been able to secure two dollars worth of public improvements for every dollar of its own money provided to sponsor the projects and match Federal funds. This Federal aid has made possible extensive permanent street improvements, has given the city a water system adequate to meet all present needs as well as future demands for some years to come, and has provided sewer service to nearly every family in the city.

For some years the residential and industrial development of the city had outstripped the extension of utilities so that in 1938 the city found itself in serious jeopardy due to lack of adequate water storage and distribution. Service to many water consumers was very unsatisfactory because of small distribution lines and low pressure, and many parts of the city were entirely without fire protection. Sewer service was available to a relatively small percentage of the population, and these were principally in the older, central part of the city.

Bond Issue Voted

In 1938 the citizens voted to issue $350,000 bonds for water, sewer, electric and street improvements. About this time the Congress voted funds to re-establish the PWA. Fortunately, in 1935 Morganton had submitted to the PWA a project which had been approved but to which no funds had been allotted. This project was approved in amended form to provide for improvements to cost $509,000, of which 45 per cent was a Federal grant. These Federal funds made it possible for the city to plan a much more extensive improvement program than originally contemplated with its own funds.

For several years prior to this time the city had been sponsoring relief-labor projects with the WPA and prior organizations, and had constructed concrete curb and gutter and placed rock on many streets. Promptly on approval of the PWA, a contract was awarded to Blythe Bros. Co. to provide a sheet asphalt binder and wearing surface on these streets. This contract amounted to $53,522.43.

Water and Sewer Project

Plans and specifications were next prepared for water and sewerage improvements, and a contract was promptly awarded to Reed & Abee, Inc. This contract involved a total of $242,422.25. The improvements included were 18 miles of 2-, 6-, 8- and 12-inch cast iron water mains, new chlorine and ammonia equipment in a modern building, approximately 120 additional hydrants, and the installation of valves as necessary to properly control both the new and the old systems. Approximately 75,000 feet of vitrified clay sewer lines were installed as part of this contract.

Three small Imhoff sewage-treatment plants have been built by Reed & Abee, Inc., in compliance with the PWA policy of undertaking no sewer construction which will add to stream pollution.

Welded Standpipes

While this work was progressing a contract was awarded to The Steel Construction Co. at a cost of $28,980 for the construction of two 750,000-gallon capacity all-welded steel standpipes 36 feet in diameter and 102 feet high. The old standpipe of 91,400-gallons capacity, upon which the city had been solely dependent since 1904, was removed. The construction of the new standpipes provided 1,500,000 gallons storage, half of this being located

Recent Improvements in Morganton, N. C., Showing, at Left, New Curb-Gutter and Crushed Rock Base Surfaced with ¾-Inch Sheet Asphalt Binder and ¾-Inch Sheet Asphalt Wearing Surface. At Right, an Alley Paved with 7 Inches of Incor High Early Strength Cement

in each side of the city, thereby equalizing pressures and giving better fire protection. The standpipes are kept full by gravity flow from the city-owned watersheds, no pumping and no purification other than chlorination being necessary.

Additional Street Work

During the latter part of 1938 and the early part of 1939 while the above work was in progress, the city carried through to completion a WPA project involving a total of $186,000. This project resulted in the construction of several miles of streets, graded and provided with storm drains, curb and gutter built, and surfaced with crushed rock from the city quarry. Several miles of concrete sidewalks were also built.

These streets, together with some others, were surfaced in the second PWA street contract awarded to Blythe Bros. Co. This second street contract included the paving with 7-inch concrete of all alleys in the business district. Owing to the limited time available to complete the project, it was decided to build some curb and gutter by contract. This work, together with other miscellaneous work, was included in a third street contract awarded to Reed & Abee, Inc. The total of these two contracts was $103,972.

From this program the city has acquired many improved streets which are rapidly being built up. Adequate water storage and distribution for fire protection and domestic use is now everywhere available, and sewerage service has been extended to possibly 95 per cent of all homes.

Program Nearing Completion

All the work has now been completed. The final contract in the PWA project provides for the construction of a 30-foot high concrete dam on the main watershed to provide storage at the source. This contract was awarded to W. F. Brinkley at $23,020 and is scheduled for completion May 10. This will complete the expenditure of $509,000, of which the PWA will contribute $229,050.

The city is expending $35,000 of its own funds from the $350,000 bond issue to rebuild and extend its electric distribution system.

One of Two Identical 750,000-Gallon Standpipes Built as Part of the Recent Improvement Program at Morganton

Engineering, Materials, Equipment

All plans and specifications for this work were prepared by, or under the direction of, the writer, with a saving to the project on engineering costs of about $14,000. This saving has been diverted to, and incorporated into, additional improvements. R. C. Wallace was Resident Engineer for the entire PWA project.

Super deLavaud cast iron pipe in sizes 6 inches and larger, together with all cast iron fittings, was furnished by Lynchburg Foundry Company. Mineralead was used for jointing cast iron pipe, with lead used in fittings and at special places. Cast iron screwed pipe and precalked pipe was used for 2-inch lines. All house connections were made with copper pipe. Vitrified clay sewer pipe was used throughout the sewerage system, using G-K bituminous jointing material. Wallace & Tiernan Co., Inc., furnished the chlorinators and the ammoniator. Incor high-early strength cement was used in the alley paving.

The improvements are already resulting in an increase in residential building, lower insurance rates, better sanitary conditions and other benefits. The Federal assistance rendered was a large factor in making these results possible.

City Health Conservation Winners

WINNERS in the 1939 City Health Conservation contest were announced in April by the Chamber of Commerce of the United States.

This contest is conducted annually by the Chamber in cooperation with the American Public Health Association for the purpose of furthering adequate health protection and health promotion services throughout the United States. The competent manner in which a community is meeting its health problems is the basis upon which the awards were made. This does not necessarily mean that awards are made to the healthiest communities. A group of public health experts from all parts of the country carefully appraise each participating city. Each community is graded on what measures it takes:

To provide and safeguard its water supply

To furnish adequate and safe sewerage disposal

To reduce infant and maternal deaths

To combat tuberculosis and syphilis

To protect its citizens against other communicable diseases

To insure healthy children

To protect and safeguard its milk and other foods

To promote effective cooperation with its physicians and dentists in furnishing necessary services to all those who need them

To enlarge and improve its lay-understanding of ways and means of preventing sickness and death and of maintaining good health

In Group I (cities of over 500,000) Milwaukee, Wis., wins the first award. Award of merit: Baltimore, Md.

In Group II (cities of 250,000 to 500,000) Memphis, Tenn., is the winner. Awards of merit: Louisville, Ky.; Newark, N. J.; Dallas, Texas; and Toledo, Ohio.

In Group III (cities of 100,000 to 250,000) the winners are tied: New Haven, Conn., and Hartford, Conn. Awards of merit: Grand Rapids, Mich.; Yonkers, N. Y.; Reading, Pa.; Springfield, Mass.; and Erie, Pa.

In Group IV (cities of 50,000 to 100,000) the winner is Newton, Mass. Awards of merit: Evanston, Ill.; Schenectady, N. Y.; Pasadena, Calif.; Madison, Wis.; East Orange, N. J.; Racine, Wis.; and Sacramento, Calif.

In Group V (cities of 20,000 to 50,000) the winners are tied: Greenwich, Conn., and Plainfield, N. J. Awards of merit: Hackensack, N. J.; Winona, Minn.; Brookline, Mass.; Stamford, Conn.; and Orange, N. J.

In Group VI (cities of less than 20,000) the winner is Englewood, N. J. Awards of merit: Asbury Park, N. J.; Hibbing, Minn.; and Virginia, Minn.

Sewage-Treatment Plant Handles Steel-Mill Wastes

Massillon, Ohio, Plant Has Primary Treatment, and Chemical Precipitation During Low River Flow

By R. F. SNYDER
Superintendent,
Sewage-Treatment Works

Main Building, with Floodlights

The Plant South from Main Building

By-pass Chamber and Sluice-Gates

Flocculator with Baffle at Right

THE new sewage-treatment plant of the city of Massillon was placed in operation October, 1937. It is designed for primary treatment only, with chemical precipitation units provided for seasonal operation when the flow in the Tuscarawas River is low, or when conditions are such that a higher degree of treatment is required than can be obtained by plain sedimentation.

The major industrial activity of the city is the production and fabrication of steel. For this reason the treatment and disposal of steel-mill wastes is a major problem in the operation of the sewage-treatment works.

The present population of Massillon is about 28,000, of which 25,000 is now being served by the plant. As soon as sewers, now under construction, are completed, the County Sanitary District, extending from the east corporation limit of Massillon to the west corporation limit of Canton, will be tributary to the plant. The population of this district is approximately 2,500, and in addition to this the Massillon State Hospital with its 3,100 inmates is connected to the sanitary system.

The business district of the city is low, and in order that it may be served properly it was necessary to construct the lower sections of the main interceptor to the plant at or below normal river level, thus making it necessary to pump all the sewage through the plant. Since there is a separate system of sewers, all storm water is discharged directly into the river and only sanitary sewage reaches the plant. The main interceptor is a 66-inch three-ring brick sewer laid in the bed of that section of the old Ohio Canal extending from the city to the treatment works site.

The Treatment Plant

The sewage-treatment works, located southwest of the city, is designed to serve an ultimate population of 36,000 persons, contributing an average daily flow of 5.2 million gallons, with a maximum daily capacity of 7.3 million gallons. The sewage enters the plant at the main by-pass chamber, which is equipped with electrically operated sluice-gates to provide for completely by-passing the plant during times of emergency.

Manually cleaned bar grates with 1-inch clear openings remove all coarse material from the sewage prior to pumping. The screened sewage flows into the raw-sewage wet well, where it is picked up by the pumps. Three sewage pumps of the open impeller type having a total capacity of 14 mgd operate under a normal head of 18 feet. They are automatically controlled in proper sequence, thus providing good flexibility of operation as well as reserve capacity if needed. In the discharge line of the pump a venturi meter is installed, complete with indicator, recorder, and integrator units, so that an accurate check of the flow is available at all times.

Chemical Treatment

When the chemical treatment units are not in operation, the sewage is pumped directly to the settling tanks. However, when these units are in operation the sewage is pumped to the flash mixer, where the chemicals are applied. The

flash mixing tank is 10 feet square and 13 feet deep, with the inlet of the tank near the top and the outlet at the bottom. It is equipped with a mixing unit consisting of two 3-bladed propellers mounted on a vertical shaft. The pitch of the blades is such that as they revolve an upward flow is created against the normal downward flow of the sewage through the tank. This action produces a quick, thorough mixing of the applied chemicals with the raw sewage.

The plant is equipped to use ferric chloride and lime, although other chemicals may be used in place of these and still obtain the same results. In determining the chemicals to be used, efficiency and economy are given serious consideration.

The chemical feed equipment consists of a solution tank for preparing the ferric chloride solution, and a variable rate liquid solution feeder for the control of the amount of solution applied. Hydrated chemical lime is also applied to the sewage through a variable rate dry feed machine.

Flocculation

The sewage, after a quick, thorough mixing with the applied chemicals, flows to the flocculator, where it is given a further mixing and stirring to complete the reaction between the ferric chloride and lime, thus producing the desired insoluble ferric hydroxide precipitate which appears as a dense floc thoroughly mixed with the sewage.

The flocculator mechanism is of the horizontal paddle type which rotates tranversely to the flow of the sewage, causing it to pass through the tanks in a spiral motion. A variable speed-drive is provided to control the peripheral speed of the paddles so that proper flocculation can be obtained. The tank, which is 44 x 21 feet and 11 feet 6 inches deep, has three baffled inlet ports at one end and three outlet ports at the opposite end. The detention period in the tank is 22 minutes for the average flow, and the velocity is such that no suspended solids will settle out in the tank.

Settling Tanks

As flocculated sewage enters the settling tanks, the dense ferric hydroxide floc settles rapidly, and as it settles it takes with it most of the fine suspended solids and some colloidal matter which is not removed by the plain sedimentation. The effluent from these tanks is quite clear and contains a very small amount of suspended solids.

The settling tanks are of the straight-line, horizontal-flow type, with mechanical equipment for the removal of solids from the floor of the tanks as well as automatic equipment for both the skimming and removal of skimmings from the surface of the tanks.

Sludge Disposal

The solids removed from the sewage in the settling tanks are drawn off at regular intervals along with the skimmings and are pumped to the digestion tanks for final treatment and stabilization by bacterial digestion. The two sludge digestion tanks are 50 feet in diameter and are equipped with PFT floating covers. Heating coils are installed in the tanks so that the temperature of the digested sludge can be accurately and automatically controlled at all times.

The gas generated in the digesters is collected and used for heating the digesters as well as all buildings throughout the plant. The average gas production is 45,000 cubic feet, or 1.6 cubic feet per capita.

The digested sludge is removed and dried on both outdoor and covered sand drying beds. At the present time the entire output of sludge is being sold for fertilizer, and a small cash return is derived from its sale. This also is eliminating a part of the labor costs for the removal and final disposal of the sludge, since in most cases it is taken directly from the beds by those who purchase it. Recently a pulverizer was purchased for reducing the dry sludge cake to a powder, and a local market is being developed for its sale.

The Main Building

Because of the danger from flood-

One of the Open Sludge Drying Beds

Glass-Covered Sludge Drying Beds

The Two Sludge Digesters

Pump Impeller Eaten by Trade Wastes

ing during high river stages, a levee 20 feet high protects the plant from serious damage. Automatic drainage pumps are provided to handle all storm water inside the levee during periods of high water in the river. Under normal conditions the storm water flows by gravity into the river.

The main building at the plant is a two-story brick structure with a basement level and a pump-room level below ground. In the pump room, which is 20 feet below ground, are the raw sewage pumps and all electrical control equipment, a utility drainage pump for pumping out all tanks and wet wells, and a deep-well pump for the water supply for the entire plant. The boiler room and water pressure storage tank are located at the basement level, and on the first floor is the flash mixer room with the chemical feed machines, a two-car garage and workshop, and a balcony around the pump room. The second floor of the building is occupied by the office, laboratory, toilet and locker room, ferric chloride solution tank, and a storage room for approximately 40 tons of chemicals.

Since the plant was placed in operation in 1937, only one serious operating problem has developed. The industrial wastes from the industrial steel mills are quite predominant, for the spent acid pickling liquor used in cleaning steel is discharged directly into the sanitary sewers undiluted, and usually contains free acid. Over a period of time this acid waste slowly attacked the metal of the raw sewage pumps to the extent that one pump impeller was completely eaten up by the acid, and the entire pump had to be replaced with acid-resisting iron parts. If this condition were allowed to continue, eventually all pumps and piping would have to be replaced.

Action has been taken requiring all the mills to neutralize this acid before it is discharged into the sewers, and release it uniformly throughout the entire day rather than having the quick discharge of 2,500 gallons of 3 per cent acid three or four times daily and at irregular intervals day and night.

When the acid waste is neutralized and discharged slowly at a uniform rate, it is desirable to have it in the sewage to be treated in this type of plant. It contains dissolved iron in the form of ferrous sulfate. Iron in this form can be used in place of ferric chloride for sewage treatment, and the resultant saving in chemicals should not be overlooked, since one of the major costs of chemical treatment is the purchase of ferric chloride or other chemicals that might be used in its place. With this iron already present in the sewage, only lime need be added for proper flocculation and pH control.

From experimental work done in the fall of 1939, it is expected that it will be possible to flocculate the iron without the addition of any chemical, because of the alkalinity of the sewage and the aeration afforded when operating the flocculator mechanism at its maximum speed. Owing to the presence of high iron loadings in the sewage, there are periods of operation when exceptionally high results are obtained. Otherwise, the operating efficiency of this plant is comparable to other plants of similar design.

The plant was designed by George B. Gascoigne and Associates, consulting sanitary engineers, and was built by Elmer O. Vogt, a local contractor, at a cost of approximately $312,000. All construction supervision and engineering were under the direction of C. E. Rice, City Engineer. Capital charges, operation and maintenance of the plant and the maintenance of the sanitary sewer system are adequately financed through sewer service charges.

The Billboard—A Blot on Nature

THE postcard reproduced below presents a design contributed by Maxfield Parrish which characterizes the billboard as "A Parasite on Public Improvements and a Menace to Public Safety." The card is issued and sold by the Vermont Association for Billboard Restriction, Springfield, Vt., and also by the National Roadside Council, 119 East 19th Street, New York.

The Massachusetts Civic League (3 Joy Street, Boston), sponsored a check-up of illegal billboards in that state which was carried on during the month of April.

The conditions which make a board illegal are stated on a circular sent out by the League:

1. If within 300 ft. of any "public park or reservation," if within view of same and not an electrical sign on a building.
2. If front, back, braces, anchors and lattice work are not painted and in proper condition.
3. If within 50 ft. of another board unless back to back.
4. If within 150 ft. of intersection of center lines of public ways.
5. If nearer than 50 ft. to the boundary of a public way.
6. If nearer than 100 ft. to the boundary of a public way when board exceeds 32 sq. ft. area.
7. If nearer than 300 ft. to boundary of public way if board exceeds 25 ft. long and 12 ft. high.
8. In locations of unusual scenic beauty or harmful to public welfare.

The Pittsburgh Welding Code

Makes Great Advance in Building Code Requirements— Bureau Operates School for Welding Inspectors

THE city of Pittsburgh, Pa., has made a great contribution to steel fabrication and erection in building construction through passage by the City Council of a progressive ordinance regulating the use of welding or gas cutting in these fields. The ordinance, No. 28, Series of 1939, establishes the legality of welding terminology, material specifications, designs, erection, etc., while the rules establish specific regulations for safety, equipment, operator qualifications, electrode or welding rod specifications, and inspections.

Perhaps the outstanding feature of the ordinance is the fact that Section 3 permits the Superintendent of the Bureau of Building Inspection, with the approval of the Director of the Department of Public Safety, to adopt, make, amend, alter or repeal rules prescribing the specific regulations to carry out the intent and purpose of the ordinance.

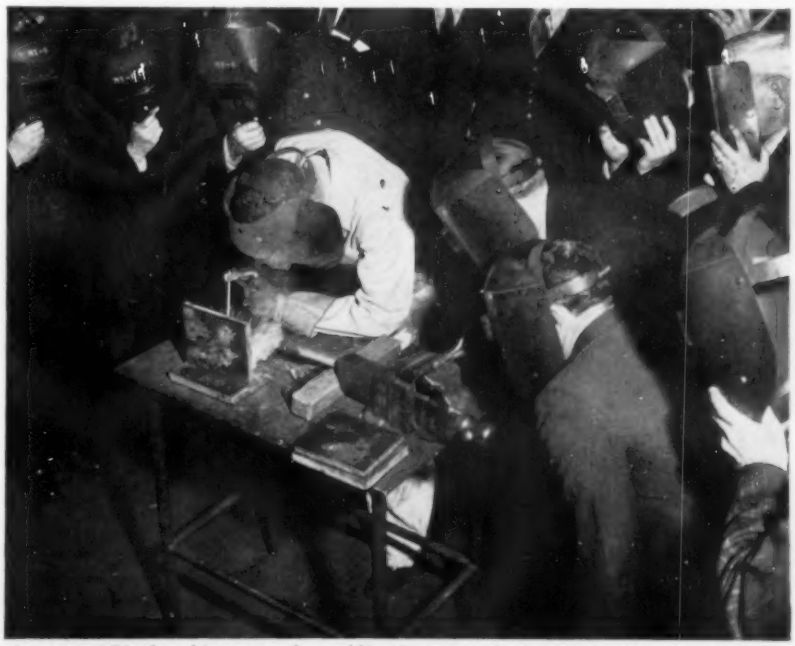
The ordinance specifically forbids the use of welding or gas cutting unless the application for a building permit and the drawings submitted with that application indicate that welding or gas cutting is to be used. Then, the Superintendent of the Bureau of Building and Inspection must be notified in writing at least 48 hours before the start of any structural welding, so that a qualified inspector may be assigned to the work.

No workmen are permitted to perform welding work on any structure in Pittsburgh without having obtained from the Superintendent of the Bureau of Building Inspection a certificate of qualification in the classification of the type of welding which he is to do. The rules contain an outline of the examination and classification of applicants for operator's certificates, and the superintendent is instructed to approve competent agencies to conduct examinations and rate applicants. The Bureau issues the certificate on the basis of the report of the examination. The fee for such a certificate is $1.00 for one year, with a renewal fee of $1.00 annually. The certificate of qualification of any welder may be suspended if the workmanship on any structural welding is, in the judgment of the superintendent, such as to indicate incompetency or negligence.

Inspection

The Superintendent of the Bureau of Building Inspection appoints inspectors from his department, or may require the owner, architect, engineer or contractor without expense to the city to provide inspection and reports of the inspection of the work of fabrication and erection by welding or gas cutting of all structural steel framework by a disinterested recognized testing and inspection laboratory or engineers competent for this kind of work.

The Bureau, with the cooperation and aid of local manufacturers and fabricators, operated during the last part of 1939 a school for inspectors of welding. This school van for eight weekly sesions, and was attended by about 50 inspectors, including 14 from the Bureau of Building Inspection, 8 from the County of Allegheny-Bureau of Tests, 3 from the City of Pittsburgh-Bureau of Tests, and about 25 from the local offices of testing laboratories and agencies. The course, which started November 3, 1939, was held at the East Pittsburgh works of the Westinghouse Electric and Manufacturing Co. The curricula included descriptions of types and uses of welding machines, the types and properties of electrodes, the properties of good welds and typical faults of welds, demonstrations of tests of good welds and bad welds, operation of arc welding equipment by the inspectors, analysis of safety equipment and inspection rules as well as analysis of welding symbols, etc., the analysis of methods of construction



A group of Pittsburgh's prospective welding inspectors is shown attending the first school held under the direction of the Pittsburgh Bureau of Building Inspection and the Westinghouse Welding Section

and gas welding and cutting. The Bureau believes that this school is an absolute essential for the adequate enforcement of the ordinance.

The Pittsburgh Code with its accompanying rules is one of the most advanced documents on welding in any building code in the United States. Many other cities have drafted provisions into their welding codes, but no other instance is known where the ordinance has dealt so specifically with welding, nor where the provisions have been so nearly in keeping with modern welding practice.

THE AMERICAN CITY is indebted to H. L. Seaman, Superintendent, Bureau of Building Inspection, Department of Public Safety, Pittsburgh, Pa., for the complete copy of the Welding and Cutting Regulations and Rules adopted in compliance with Ordinance No. 28, Series of 1939, on which this article is based.

Neighborhood Conservation in Chicago

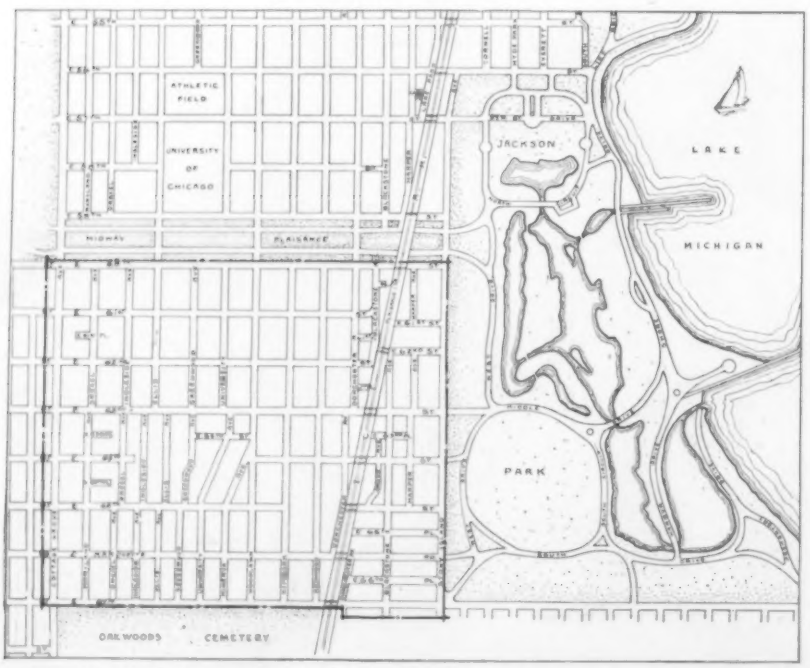
By ROBERT B. MITCHELL
Director, Woodlawn Conservation Project

THE obsolescence and deterioration of urban residential neighborhoods is recognized as one of the major problems of all larger American cities. Programs for slum reclamation and rebuilding are being undertaken by the cities and states in cooperation with the Federal Government; but little has been done for the salvaging of those neighborhoods which still retain social and economic values worth saving, to prevent the formation of more slum areas. In recognition of this, many agencies and organizations are cooperating in an experimental neighborhood conservation program in Woodlawn, an area of approximately a mile square, on the south side of Chicago.

The boundaries of Woodlawn are shown on the accompanying map. It is served by the best of transportation, bringing the Chicago Loop within a fifteen-minute ride. Within the area are fourteen Catholic and Protestant churches, three public and two parochial elementary schools, one public and one parochial high school. Here also is located one of the city's largest outlying business districts, whose new privately financed street-lighting system was described in the March issue of THE AMERICAN CITY.

Over 35,000 persons live within the area in a variety of buildings, ranging from frame and masonry houses of the 1870's and '80's to apartment hotels of 1929. Many apartment buildings have been converted into cheap rooming houses and kitchenette units. With one of Chicago's largest and most beautiful parks at her front door, Woodlawn suffers from lack of accessible recreation space, particularly for children. Obsolescence of both street pattern and many buildings, congestion, lack of parking space, and zoning which does not give sufficient protection, are among other more important problems.

Social and community organizations are strong. Thirty-five social and civic groups comprise the Associated Clubs of Woodlawn, a Community Council, which appointed the Woodlawn Planning Committee in 1938. This committee is divided into two major departments: Social and Civic, dealing with education, recreation, public safety, juvenile problems, etc.; and Physical and Economic, whose activity is the Woodlawn Conservation Project.



A Section of the South Side of Chicago, Showing the Boundaries of the Woodlawn Conservation Area and Indicating Surrounding Conditions

Surveys and Maps

The first task of this project is the assembly of pertinent physical and economic information about the Woodlawn community and the individual properties within it. This is taken from the Land Use Survey and public records of tax delinquency, mortgages, etc. Much of it is being mapped by properties and parts of blocks.

Intensive architectural and financial study of selected typical properties and blocks will determine the feasibility of building improvement, and develop programs of modernization, maintenance, and management policy which may be recommended to property owners to their advantage and that of the community. A committee of persons experienced in real estate finance is exploring present financing available for various classes of properties through private or governmental

sources, and developing possible means of financing contemplated improvements to buildings at relatively favorable terms.

Over-all neighborhood planning studies will be expressed in an item-of-work program of community improvement including recreation facilities and open space, automobile parking, relief of traffic congestion, street and transportation changes, parkway landscaping, and re-zoning. Suggested block improvement plans will be prepared.

Aid from Many Sources

This is a WPA project, set up as an extension of the Land Use Survey, whose sponsor is the Chicago Plan Commission. The Executive Committee includes leading local citizens as well as representatives of the Home Owners Loan Corporation, the Federal Housing Administration, the Reconstruction Finance Corporation and the University of Chicago. A city-wide Advisory Board, composed of representatives of banks, insurance companies, utility companies and others concerned with the problem of neighborhood deterioration, is divided into technical committees on different phases of the study.

As prevalent physical and economic conditions of properties are discovered, and as planning studies proceed, there will be established the governing conditions within which plans are to be executed. At that time there will be developed by the Executive Committee and the Advisory Board a proposal for organization and method of procedure in carrying out the plans and encouraging property improvement.

The total cost, including WPA, is estimated to be approximately $70,000, of which $23,000 is the sponsor's contribution. Toward the latter a large national chain store company is contributing space; a transportation company is making blueprints and photostats; HOLC is furnishing direction, technical personnel and office furniture. FHA and RFC are giving technical advice and personnel. An operating fund has been subscribed among neighborhood interests, banks, utility companies, the University, the Real Estate Board, and others.

It is hoped that this study will clarify the problems and point a way toward their solution not only in Woodlawn, but also in other neighborhoods and cities.

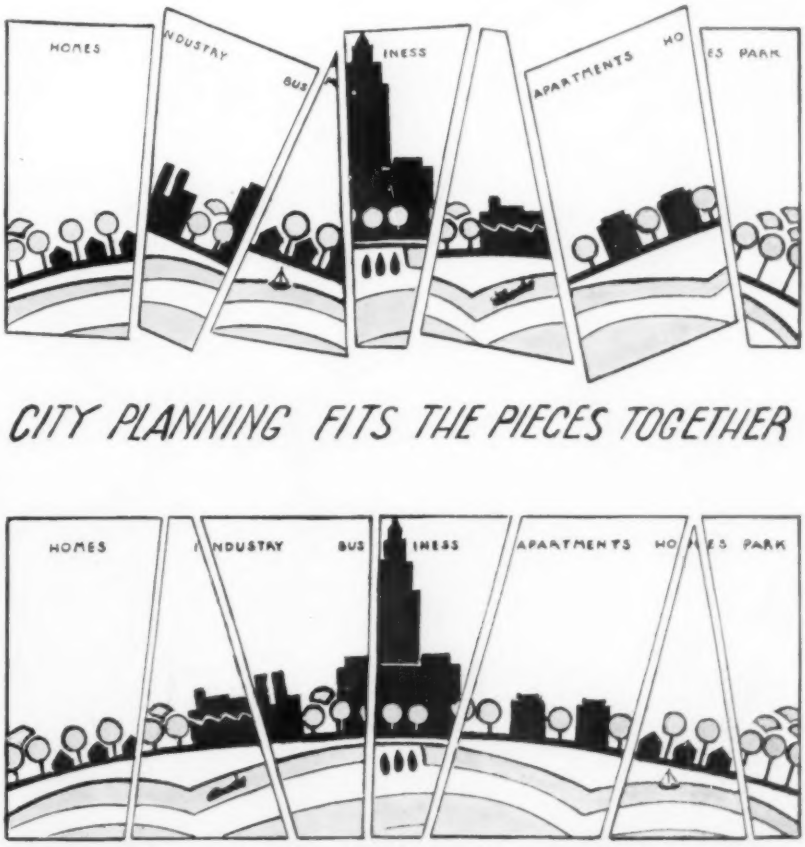
"Planning Your Community"

Putting the Right Thing in the Right Place

A PORTION of the cover of the manual of community planning issued in February by the Regional Association of Cleveland is herewith reproduced. The procedure set forth in this publication is intended principally to assist local planning commissions in their work. For the first time a clear statement is presented of the powers, duties and responsibilities of planning commissions under the Ohio law. The function of civic organizations and private citizens is also discussed.

"Two interdependent methods of attack on our problems present themselves," says the Association, of which Ernest J. Bohn is Director. "First we must coordinate all the existing agencies which are active in the development of the region. We must have a regional plan which will take into account all the phases of development which are regional in character—such as thoroughfares, transportation lines, utilities and usage of land in broad areas. The Regional Association of Cleveland has undertaken to head up this task. . . .

"The second method of attack consists of the more detailed planning of individual areas—the neighborhoods, the twelve cities, forty-two villages and six townships. Here is the field of the city and village commissions and of neighborhood groups. . . . Further, there is the job of detailing, of defining the broad picture, of integrating the plans with the activities of the people who will live with them, and, finally, of educating the public to the advantage of the planned community."



From the Cover of the February, 1940, Publication (No. 8) of the Regional Association of Cleveland

When You See Those Trees at the New York World's Fair

THE most enduring miracle of the New York World's Fair should be the 7,000 big trees which were collected, planted and successfully grown at the points spotted by Major Gilmore D. Clark on the grand design of the Fair grounds. These trees are the permanent element of the municipal park which will glow on the Flushing Meadows after the evanescent glamor of the Fair has ceased to remind people of the value of the arts and industries of productive work.

In the spring of 1937 the Flushing dumps were dumps. Grading had started, mountains of ashes had been knocked down over rich veins of junked water heaters and ancient automobiles. Pure ashes contain good plant food, but these ashes were defiled by chemicals which gave different reactions every few feet. The place was a desert of toxic salts.

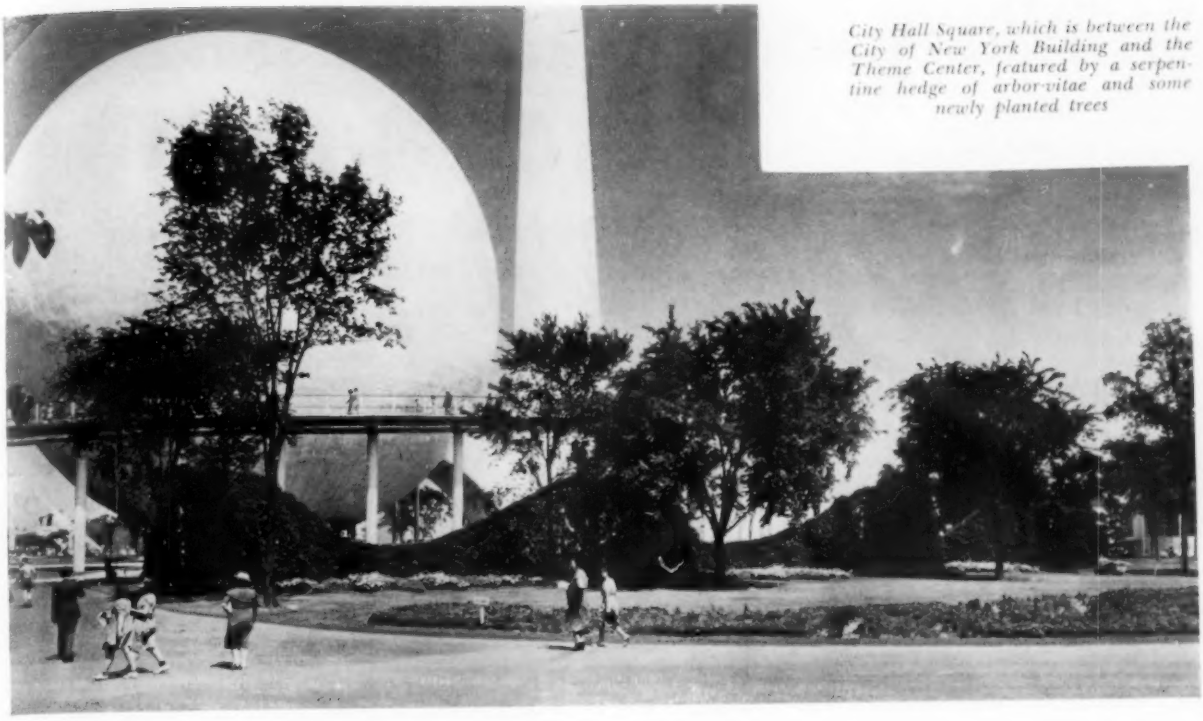
One of the potential attractions of the site is Flushing salt-water creek, from whose bottom thousands of cubic yards of muck were dredged and dumped nearby. Given two or three years, this mud would have been spread in shallow layers and leached out, the process speeded by use of lime, phosphates, potassium compounds, manure. If the city park had been the first instead of the final objective, the New York City Park Department would doubtless have proceeded along these lines and then worked solidly on the entire area on the theory that that kind of building brings greatest satisfaction in the long run.

But nobody could tell how long would be the run of the New York World's Fair, except that certainly it must make its reputation early in the first season. The objective was not a park, but a land of obvious enchantment created by a wand forged of courage, confidence and ample funds.

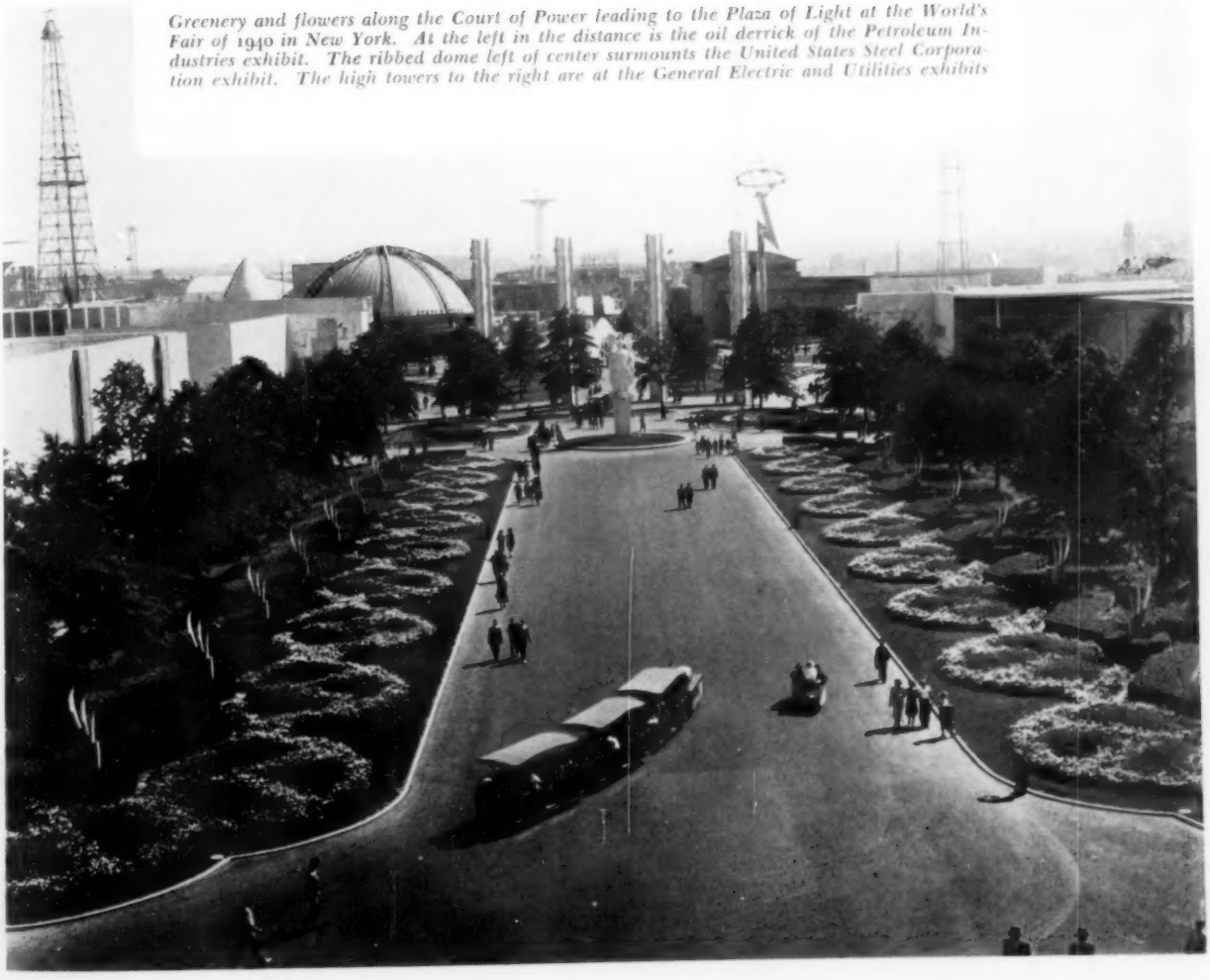
Experienced horticulturists said the tree project was impracticable. But the design called for trees anywhere from 3 to 20 inches in diameter (so many calipers, as the tree experts say) and up to 60 feet tall. On the designs the big trees looked as if they had matured there during the years. This was the way they must look in fact.

The work was done by many contractors, who scoured the farms and estates within a radius of 150 miles to obtain the requirements of big trees needed. The principal species are pin oaks, elms, willows, plane trees, honey locust, Norway maples; and down Constitution Mall a double row of red maples from Long Island and other places in New York, and from New Jersey. Every tree was selected individually in accordance with graphic specifications prepared by Henry Nye, landscape architect of the construction department of the Fair. On each specification sheet for each type and size of tree was a sketch showing the proportions or symmetry required. Then were listed the required diameter, height, spread, branching and ball diameter. The trees were bought with very large ball, up to 15 or 16 feet, so as not to require pruning back. Each tree, before acceptance, was reported on by inspectors.

The first landscaping job was to put the big trees in unusually large tree pits on the main axis both ways from the Perisphere. The top-soil used contained by weight not more than 5½% organic matter, 15 to 40% clay, 15 to 35% silt, 15 to 40% sand, including not more than 3% fine gravel. The spring and summer of 1939 were unusually dry, and constant watering was necessary except in wet places where quite a number of trees had to be raised. There were comparatively few losses among the 7,000 trees planted in this permanent landscaping project.



City Hall Square, which is between the City of New York Building and the Theme Center, featured by a serpentine hedge of arbor-vitae and some newly planted trees



Greenery and flowers along the Court of Power leading to the Plaza of Light at the World's Fair of 1940 in New York. At the left in the distance is the oil derrick of the Petroleum Industries exhibit. The ribbed dome left of center surmounts the United States Steel Corporation exhibit. The high towers to the right are at the General Electric and Utilities exhibits

Street Paving in Rock Island with Crushed Brick Concrete

New Type of Pavement Solves Problem of Disposal of Old Brick

By W. J. Gallagher
City Engineer, Rock Island, Ill.

THE CITY of Rock Island had on hand several hundred thousand used paving brick removed from old brick streets that had been replaced with concrete during the last few years. Many of these brick were practically as good as new and were used to patch existing pavement or to build new streets. There were, however, a great number of the brick in the storage pile that could not be used for this purpose—about 70 per cent. The problem before the city was to develop a use for these bricks that could no longer be used in brick paving.

The city administration instructed its engineer to investigate the possible use of this material. The first consideration was cement-bound macadam. Upon investigation it was soon seen that there would not be enough men available to break the brick by hand, which is apparently the best method of preparing the aggregate for this type of pavement, because a mechanical crusher wastes a large proportion of the material by producing an excess of fines.

Producing the Aggregate

Upon deciding that the crushing would have to be done mechanically, it was necessary to determine the type of crusher that would be used. Actual field tests showed that a jaw crusher with screens to control the output would be the correct procedure. The crusher used is an old portable jaw crusher with 8 x 15-inch jaws. It is mounted on concrete pedestals about 5 feet above the ground. The brickbats are wheeled up an incline in pneumatic-tired wheelbarrows to the mouth of the crusher, and a conveyor raises the crushed material to an elevated bin of about 5 cubic yards capacity. The crushed material is passed over and through screens as it falls from the conveyor to the storage bin. The screens are attached to the conveyor frame and are supported from the bin by chains, thus giving a certain amount of vibration to the screens.

In the Rock Island plant all the material that is retained on a 2-inch screen is returned to the crusher by gravity for re-crushing. All material that passes a ¼-inch screen is rejected by gravity to a waste pile. At the present time less than 5 per cent of the material fed into the crusher is thus discharged. The material that is sent to the waste pile is a waste only as far as the concrete plant is concerned, for it is used in producing base for salvaged brick streets.

Gradation of Crushed Paving Brick as Used for Rock Island Type Paved Cement-Bound Macadam

Report by W. J. Reese Testing Laboratory, Rock Island, Ill.

Date sampled—December 2, 1939
Date tested—December 4, 1939

Sieve Analysis: Sieve	Grams Retained	% Retained on	% Pass.	*State Spec.* % Pass.
1½ in.	2,452.8	31.7	68.3	70-95
1 in.	2,190.2	28.3	40.0	50-80
¾ in.	1,025.3	13.3	26.7	——
½ in.	827.3	10.7	16.0	10-30
⅜ in.	478.0	6.3	9.7	——
#4	394.9	5.1	4.6	——
Pan	358.6	4.6	—	0-5

By adjusting the slope of the vibrating screens and the jaw openings it is possible to produce a coarse aggregate of almost any gradation. The table shows how close to the standards of the Division of Highway Specifications for concrete base course we are able to produce aggregate from brickbats.

The power for the crusher is furnished by a Model A Ford motor controlled by a governor and housed in the plant office. This office is also used for tool storage. The plant can produce eighty tons in eight hours with eight men, one foreman, and one truck to place the crushed material on a stock pile.

Laying the Concrete

This coarse aggregate is used to produce concrete which is proportioned by the same method of proportioning as in all State Highway work. The streets that have been constructed are all 25 feet from back to back of curb. The slab is poured in panels 6 inches thick, 12.5 feet wide and 30 feet long. The longitudinal joint which is the center line of the street contains a 2-inch key to aid in locking the two halves of the slab together. All the transverse joints are expansion joints. They are 1 inch wide and are placed on 30-foot centers. These joints are poured with PAF-1 asphalt.

The slab is struck off with a screed pulled by three men. After the strike-off, the slab is floated with a wood float and then belted. When the concrete has set up sufficiently, the surface is brushed. A 6-inch curb is cast integral with the slab. The aggregate in the curb is ¾-inch gravel, to give greater workability. The curb is also given a brush finish.

The slab is cured for at least 24 hours under cotton blankets that are furnished by the WPA. These blankets are similar to those used by the Texas Highway Commission. After this preliminary curing, the slab is cured by means of calcium chloride. The average slab shows beam strength sufficient to allow traffic in about seven days. It is then open to traffic with no load restrictions.

Beam tests show that this concrete is uniformly stronger than that produced by standard aggregates with the same cement content. All the material used in the construction is weighed into the 10-E mixers used for all the WPA construction in this city. Each mixer is equipped with a water-measuring device and a batchmeter. The slump of the mixed material is maintained at 2 inches.

Street Cleaning Financed by Municipal Light Plant

Crawfordsville, Ind., Uses Profits of Plant to Maintain Equipment in All City Departments

The New Austin-Western Patrol Sweeper with the Leaf Broom Attachment in Place

By L. B. Clore
City Engineer

CRAWFORDSVILLE, situated in central Indiana, has a population of 10,500, and enjoys a city tax rate below the average of other cities of the same population within the state. The city owns its municipal light plant, which furnishes current to the city of Crawfordsville and adjacent towns, and every factory and industry in the city purchases its power from the municipal plant. The plant made a net profit of $145,000 in 1939, notwithstanding the fact that the light and power rates are among the lowest in Indiana.

Part of the profits of the municipal light plant are used to purchase and maintain first-class equipment in all departments. In 1939 new street-cleaning equipment was purchased from funds derived from this plant.

Street-Cleaning Equipment

Prior to 1939, all street cleaning was done with one 2½-yard capacity street sweeper, supplemented by a horse-drawn wagon into which hand sweepers loaded the material cleaned from the streets. When it was decided to replace this equipment, an investigation was made to determine the most efficient type of street-cleaning equipment. This led to the purchase of a small street sweeper and a small street flusher, since the two could be purchased for the price of one large sweeper. An Austin-Western Patrol sweeper with a bin capacity of approximately 1 yard, and an Etnyre 1,200-gallon flusher with push-button controls and auxiliary fire-fighting equipment, mounted on a 2-ton General Motors cab-over-engine truck with oversize tires, were purchased.

Operation of Equipment

The major part of the street cleaning in Crawfordsville is done between 3:00 A. M. and 12:00 noon. The downtown streets are cleaned between 3:00 A. M. and 7:00 A. M., and the residence streets are cleaned during the remainder of the morning. One dump-truck follows the sweeper, picking up refuse piles as soon as they are dumped. No definite schedule is followed as yet for the sweeper and flusher, because their operation depends entirely upon

The New 1,200-Gallon Etnyre Flusher Recently Purchased by Crawfordsville, Ind.

the condition of the streets. When the streets are dusty or need to be cleaned across the entire width, the flusher is used. When there is a marked accumulation of rubbish in the gutters, as is usually the case downtown, the sweeper is used.

We find that there is a definite field in street cleaning for both the street flusher and the street sweeper. The latter is ideal for sweeping gutters where heavy litter is found, or where it is desirable not to have the débris washed into the sewers. The leaf broom attachment to the patrol sweeper was found to be very efficient for piling up leaves during the autumn months. Experience has shown that the increased mobility and higher speed of the small patrol sweeper make it more efficient than the old-style large-capacity sweeper, at about one-half the first cost of the larger machine.

The street flusher is ideal to use in dry, dusty weather or in places where it is desired to clean the entire width of the street. The narrower secondary streets can be cleaned across their entire width with a single passage of the flusher, and practically all the wider streets can be cleaned by a trip up one side of the street and down the other. The flusher has also been found of considerable value in flushing slush and mud from the downtown streets during winter and spring thaws. The flusher also has auxiliary fire-fighting equipment and will be used during dry summer months for fighting grass fires where it is inconvenient to lay a long line of fire hose from a distant fire hydrant. The flusher also has a suction attachment for pumping out cisterns, cellars, and excavations.

One important fact has been brought out in the purchase and use of this new equipment. The combination of the sweeper and flusher gives more efficient, more rapid and better street cleaning than the use of either of these pieces alone. As this equipment has been used less than one year, no definite operating cost data are available, but the Street Commissioner, Frank Rose, reports that both pieces of equipment are operating at low cost.

Where the "Garden of a Million Tulips" Was to Be

TWO hundred varieties of tulips and hyacinths, the gift of the Government of the Netherlands to the City of New York, were to make a magnificent floral display, celebrated with a festival of dance, song and spectacle under the auspices of city authorities every day during the week beginning Sunday, May 12, with dedication of the Garden by the Minister of the Netherlands to the United States. Springtime festival programs were to be presented by the various boroughs during the week, and open-air musical programs.

As this issue of THE AMERICAN CITY is going to press, announcement is made that, because of the excessive rains of the last month, or for other causes, most of the bulbs have died and the display and festival will have to be called off.

PHOTOGRAPH BY COURTESY OF DEPARTMENT OF PARKS, NEW YORK

Henry Hudson Parkway, New York, Where Many Thousand Tulips Were to Bloom

Chattanooga's Municipal Power

By S. R. FINLEY
Electric Power Board of Chattanooga, Tenn.

THE OPERATION of Chattanooga's public power system during 4½ months has brought to the 38,000 customers of the city savings of $553,731, based on the average rate per kwh charged for electric service in the same period of 1938 under private operation. These savings were in addition to a surplus of $99,407 earned by the power system above operating expenses, interest charges, depreciation, taxes, and provision for bond retirement. Included in the operating expenses were wage increases totaling $25,000 for 165 employees in the operating department to bring wages to the prevailing rates.

Publicly owned electric power came to Chattanooga at midnight on August 16, 1939, when ownership of the Tennessee Electric Power Company's distribution system passed to the city as its share of the TVA-Commonwealth & Southern purchase agreement. The price paid by the city was $10,850,000, recognized by the Electric Power Board and its officials as a top price, and about twice the present-day appraisal price of an electric system sadly in need of rehabilitation and poorly maintained during the last few years.

The purchase price had been secured by the sale of a revenue bond issue which, sold on 30 years' redemption basis, brought an average interest cost of 2.7 per cent for the money. At the time of this bond sale the average interest rate on the city's $15,000,000 outstanding general obligation bond debt was 4 per cent. Approximately 22 per cent of the city's income from taxes was required for the debt burden of its general obligation bonds, whereas 17 per cent of the estimated income from the sale of electric current was required to pay the debt burden on its distribution system.

Previous to purchase, the city had partially constructed a competing distribution system, supplied by three transmission lines built to the TVA power center at Chickamauga Dam, and in January, 1939, had actually begun service to customers taken over from the power company. An agreement to purchase had been concluded at that time and competing construction work had been halted in anticipation of the purchase, which was not completed until August 15 following.

As if in anticipation of the TVA retail rates which the city's Electric Power Board announced would prevail, the use of power in the city began to pick up soon after the purchase agreement was concluded. This pick-up reached its full momentum on August 16, when the rates were put into effect, and the months following have seen a steady increase. These retail rates provided large decreases in the cost of service to customers of all classes and encouraged a wider use of current:

Residential	*Kwh Per Month*	*Cents Per Kwh*
1st	50	3.0c
Next	150	2.0c
Next	200	1.0c
Next	1,000	0.4c
Over	1,400	0.75c[1]
Min. mon. bill		$0.75

Commercial	*Kwh Per Month*	*Cents Per Kwh*
1st	250	3.0c
Next	750	2.0c
Next	1,000	1.0c
Over	2,000	0.8c
Min. mon. bill		$1.00

Industrial		
Demand Chg.—		
1st 1,000 kw		$1.00
Demand Chg.—		
Over 1,000 kw		.90
	Kwh	
1st	10,000	1.0c
Next	25,000	0.6c
Next	65,000	0.4c
Next	400,000	0.3c
Next	1,500,000	0.25c
Over	2,000,000	0.2c
Min. mon. bill		none

Street-Lighting Rate Unit Burned	*Per Yr.*
All Night	
1,000 lumens	$12.20
2,500 lumens	15.72
4,000 lumens	22.54
6,000 lumens	27.14

No investment by city in lines, fixtures or maintenance.

The Federal Power Commission system of accounts was immediately installed, and all bookkeeping since that date has been upon that basis. Monthly financial reports have been made each month to the Board, available by the 10th of each succeeding month. The Board uses Burroughs billing machines.

In its required public semi-annual report on January 1, 1940, the financial statement showed *for 4½ months*:

Total electric revenue		$1,244,746
Cost of power	536,117	
Operating expenses	241,551	777,668
Gross income after expenses		$467,078
Interest charges	122,131	
Depreciation	120,823	
Taxes	49,708	292,662
Net income		$174,416
Provision for bond retirement		75,000
Balance to surplus		$99,407

Against the average rate per kwh charged in the last 4½ months of 1938 under private operation, the 38,640 customers of the city, with TVA retail rates, in the last 4½ months of 1939 saved as follows:

Residential	$149,658
Commercial	72,951
Industrial	324,146
Street lighting	7,876
Total four months' savings	$553,731
Estimated for one year	$1,661,193

The amendment to the city charter, under which the Electric Power Board has sole authority and responsibility for the electric power system, requires that the "Board shall reimburse the city annually in an amount which the city shall lose as a result of the city acquiring an electric distribution system." This is estimated to be $130,000 annually on an assessed valuation of $6,537,725.[2] The

[1] When a residential customer uses more than 1,400 kwh per month, the excess rate is 0.75 cent; because the high consumption will probably require special service in the way of transformers, service drops and meters.

[2] The items of $130,000 and $140,000 to compensate city and county for loss of taxes are not shown on our 4½-month Financial Statement, for the reason that these amounts of taxes for the calendar year 1939 had to be paid at the time of purchase of the system on August 15, in order that the city might secure a clear title free from a tax lien to the properties. The power company paid the taxes up to August 15, and the Power Board paid the taxes from August 15 to December 31. The Power Board's share of the city taxes from August 15 to December 31 is the $49,708 shown, and the Power Board's share of the county taxes for the same period is $55,460 carried as a deferred debit. The reason they were handled in this way is that our Board has legal authority only, under the legislative enabling act, to pay city taxes. Thus they can only be shown on our Income and Expense Summary as a deduction, and the county taxes for the same period cannot be legally shown owing to the fact that we have as yet no legal authority to pay them. For the last 4½ months of 1939 they were paid as part of the purchase price and carried as a deferred debit in our assets. We expect to have legal authority to pay county taxes during 1940 and, beginning in January, each month an amount to cover them is being set up as a probable appropriation from our earned surplus. There has been no tax loss to the city or county thus far and it is contemplated there will be none.

ADAMS MOTOR GRADERS
—FOR ALL TYPES OF CITY GRADING WORK

THE City of Pasadena, Calif., whose machine is pictured here, is a typical user of Adams motor graders, using their machine for the maintenance of dirt streets and alleys, for scarifying and re-shaping oiled streets, for building new grades, spreading pre-mix material, etc. These versatile graders will handle all of *your* grading jobs and, like this owner, you will be enthusiastic about their wide adaptability, their ease of operation, their balanced construction, strength, power, and economy.

Why not see your local Adams representative today for a demonstration on your streets? If you do not know his name, please write J. D. Adams Company, Indianapolis, Indiana.

Board will also reimburse the county approximately $140,000 annually on assessed valuation of $7,797,801 (which includes the city valuation). None of the city's general taxing income has been used for the support of the electric distribution system.

The power company had been an aggressive merchandiser of electrical appliances, an operation which was immediately discontinued by the Board on August 16. Instead, an energetic program to encourage sales by retail dealers was put into effect. In four months 850 electric ranges and 400 electric water heaters were sold by them, and these, with the sales of other appliances, produced a volume of $700,000 in dealers' sales equal to three times the previous full year's sales by the power company. In the year 1938, the company sold $200,000 worth of appliances, and the dealers sold $500,000 worth. The dealers' estimate for 1940 is 2,500 ranges and 1,000 water heater sales and a gross volume of appliance sales of $1,500,000 anticipated.

Aside from the tremendous savings in years to come on electric service bills, due to the low TVA rates which the Power Board charges, Chattanooga's greatest benefit will come with opportunity for development by a united citizenship, which had been sorely divided by the "power fight."

National Chamber's Program for Improvement of Housing in Cities

ENFORCEMENT of legislation by city governments to compel repair of low-standard dwellings; changes in the public housing policy of the Federal Government; encouragement of means for lowering building costs; and concerted effort by private enterprise for reconstruction of blighted downtown areas—these four proposals for creating better housing conditions for low-income groups in cities were put forward last month in a report entitled "Improvement of Housing in Cities," by the Public Housing Committee of the Chamber of Commerce of the United States.

Suggesting that this program be worked out in cooperation with local relief administrations in order that needed assistance may be given to families which might otherwise suffer hardship through a thoroughgoing enforcement of sanitary and housing legislation, the Committee urged that chambers of commerce and other civic organizations take the leadership in providing the essential public understanding and support in their communities.

In the opinion of the Committee, this country cannot afford to solve the housing problem of the lowest-income families with new publicly owned housing. "To spread the benefits of the present Federal program equitably would involve expenditures for subsidies which would place an intolerable burden on taxpayers, many of whom would be living, as is now the case, in dwellings inferior to those which are subsidized." The report suggests that, where public aid is essential, the subsidy be given to the family and not to the dwelling, and that it be eliminated when the family no longer needs this assistance.

Urging stimulation of research and of private enterprise, the report said:

> It is highly desirable that both the government and private industry should encourage research and engineering to lower the costs of well-designed and durable dwellings. The home-building industry will enhance its service to the public, and make a notable contribution to the improvement of housing, by bringing its product within the purchase range of increasingly large numbers of lower-income families. Substantial progress has been made in this direction in the past few years with the government and private industry cooperating, and more progress may reasonably be expected. It will do more than any subsidy can possibly hope to do to improve housing, and it will do it without burdening the taxpayers or tempting the government to become the landlord of its citizens.
>
> Finally, there is a very great need to encourage private enterprise to undertake the rehabilitation and reconstruction of obsolete and deteriorated downtown areas in cities. Such encouragement must be predicated upon a comprehensive city plan. But in addition there are needed special forms of assistance with land assembly and other safeguarded inducements.

Editorial Note:

A somewhat similar suggestion as to rent subsidy was made by Bruce Barton in an address on April 23 before the New York Building Congress:

> It has occurred to me that it would be worth while to experiment with a part of the present Federal subsidy, and modify the existing law, to the end that private enterprise could build a project using its own capital, but obtain from the government a rent subsidy for certain tenants which the government might select.
>
> Of course, the plans and site would have to be approved by Washington. But a risk to the landlord would be eliminated because the structure would be virtually a fully rented building.
>
> I do not suggest that great sums of money be used for this experiment in the beginning, but I do feel that some such effort should be attempted, with proper government supervision, in order, at an early date, to obtain a technique for shifting to private enterprise this obligation of properly housing the lowest-income group.

Aside from the dubious wisdom of treating ill-housed low-income families as charity recipients, neither Congressman Barton's proposal nor that of the Chamber of Commerce of the United States explains how construction of housing projects for families unable to pay an economic rent can be financed unless with a government guarantee of subsidy over a long period of years. To be sure, a rent subsidy ought to be eliminated when a family no longer needs this assistance; but if the subsidy went to the project and not to the tenants, such subsidy could likewise be eliminated when no longer needed.

Housing Exhibit Held in Public Library

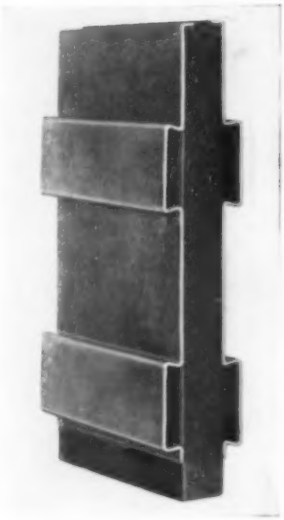
NEWARK, N. J.—"Newark Rehouses" was the subject of an exhibit at the Newark Public Library, arranged by members of the class of 1941 at the New Jersey State Teachers College.

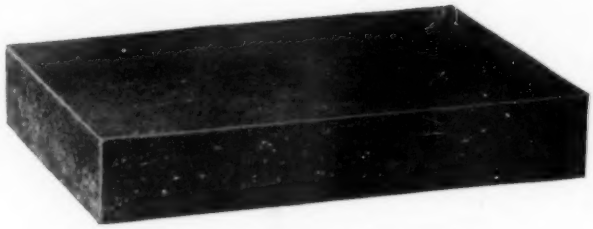
In one part of the display, graphs, charts and photographs dramatized housing problems and pointed out the need for improved housing conditions in industrial areas. Another section featured students' proposals for reconstruction of part of Nesbitt Street, where a public housing project will eventually be erected. These included suggested locations of buildings to attain a maximum of light and ventilation, the type and size of apartments best suited to meet current needs, and model floor plans.

A final section of the exhibit, which emphasized the effect of adequate housing on citizenship and child welfare, consisted of watercolor sketches of the Nesbitt Street project of the future, showing interior views of homes, and scenes of cheerful living.

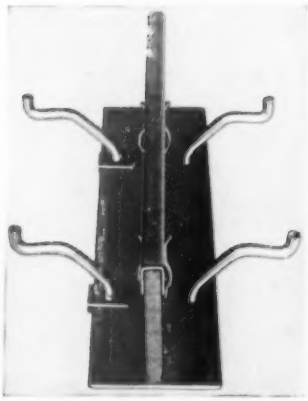
EXPANSION JOINTS by SERVICISED

1914 — 1940



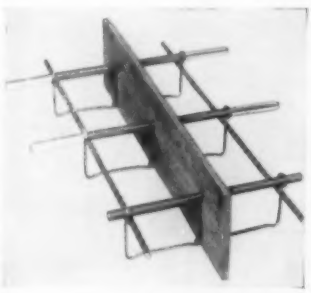


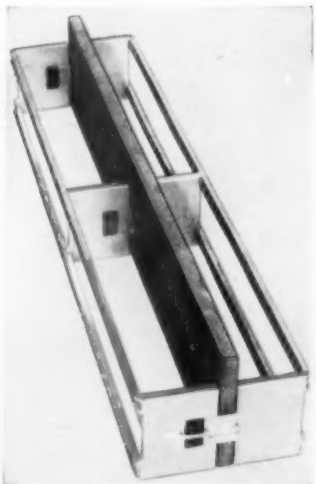
SERVICISED PARA-PLASTIC JOINT



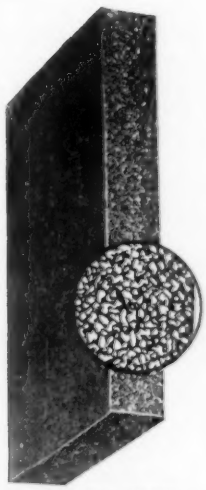
Load Transfer Plates can be made in continuous sections or individual plate sections.

Metal Accessories to Expansion Joints include the Joint Assembly and the Bridged Load Transfer Device.



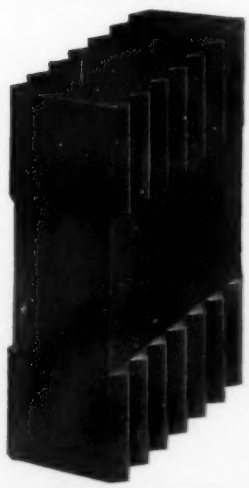


IMPROVED SERVICISED FIBRE BOARD



SERVICISED CORK RUBBER JOINT

The improved forms of Servicised Expansion Joints shown here are the Fibre Board, Para-Plastic Joint, Cork Rubber Joint, and the Cor-Rubber Joint.



SERVICISED COR-RUBBER JOINT

WRITE FOR COMPLETE CATALOGUE

SERVICISED QUALITY PRODUCTS

SERVICISED PRODUCTS CORPORATION

6051 West 65th Street — **Chicago, Illinois**

1410 OSWEGO STREET - - - - - - - - - - SYRACUSE, N. Y.
CHURCH & F STREET - - - - - - - - - - WILMINGTON, DEL.

Representatives in all principal cities

An Old New England Town Migrates

THE community of Hill, N. H., which received its grant in 1753 and was incorporated in 1778, is taking intelligent advantage of the unusual opportunity forced upon it by the Federal Government's flood-control reservoir on the Pemigewasset River. Homes of many generations must be abandoned and a new town planned on a selected site a half-mile west.

Out of a total population of 465, there are about 350 people living in the concentrated village covering only five per cent of the town land area, 26 miles north of Concord, the state capital, along one of the most heavily traveled routes in New Hampshire. Eighty homes, three stores, two gas stations, a garage, a town hall, a school, two churches, two small wood-working plants, and a post office, represent this well-balanced community, the income of whose people is from manufacturing, agriculture, recreation and trade.

On a replacement basis, the value of the public property in the area to be flooded is about $130,000, and includes the town hall, school, storehouse, streets, bridges, sidewalks, two cemeteries and a water system. The construction of these facilities will have to be financed by the town until final payment of cash is made by the Federal Government, and the excellent credit of the town will make this possible at a low figure.

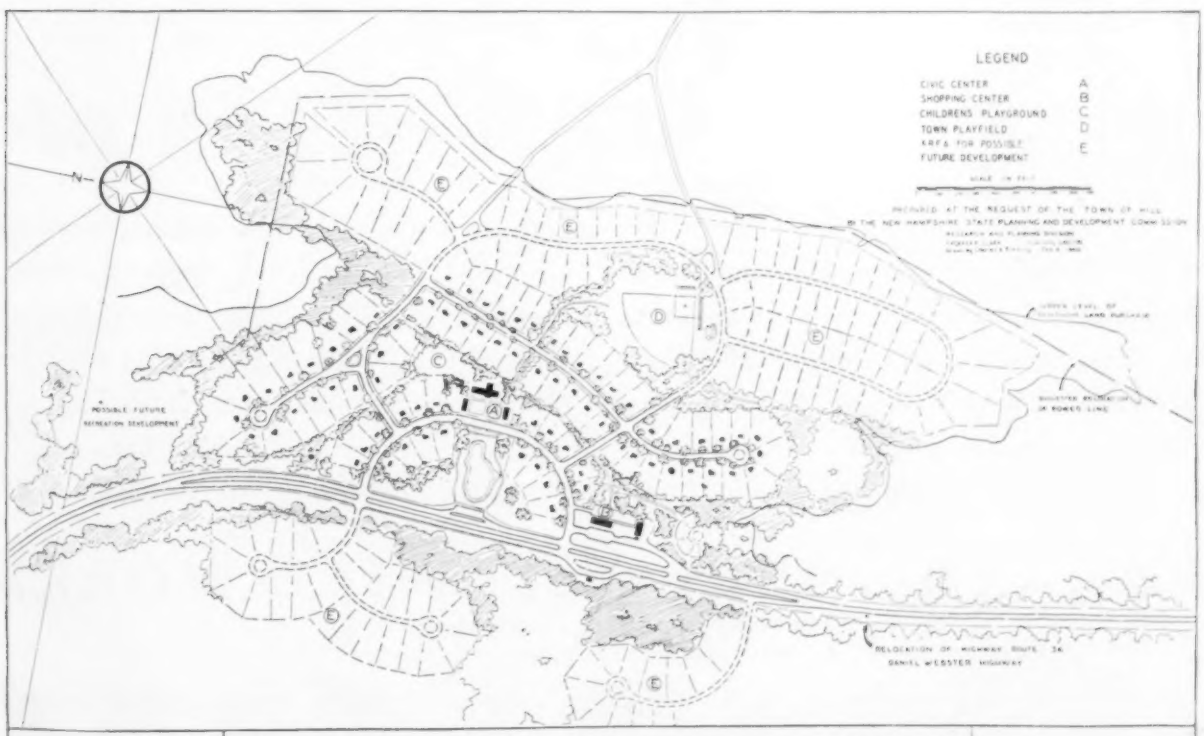
The advice of the State Planning and Development Commission was sought as the first step by the townspeople, and for the last six months the town officials and the state planning staff have been working out a plan to meet the needs and desires of the people. The state law does not permit a town to use public funds to buy land or erect structures for other than public purposes. Therefore, upon the recommendation of the State Planning Division, a non-profit corporation, the Hill Village Improvement Association, Inc., was formed, on January 10, 1940. The village planning committee is made up of the three selectmen and nine directors of the corporation.

The *News Letter* of the American Society of Planning Officials states:

> The town meeting on March 12, 1940, considered what was probably the most far-reaching set of propositions ever presented to a New Hampshire town meeting. The meeting unanimously voted to the town officials all necessary authority to construct the new town and to dispose of the old facilities to the Federal Government.

The site of New Hill Village, as the horseshoe-shaped development may be called, is largely wooded and includes a pond. It is near the relocation of the Daniel Webster Highway, which will remove heavy traffic from residential areas. The new business center will be at one end of the horseshoe, at the junction of the main town street with the relocated state highway, but on a parallel street. The community buildings will be at the top of the horseshoe. Children will not cross the highway to reach the school.

"It is important," says *Planning and Civic Comment*, to note that the actual decisions on the various features of the new village are being made by the townspeople themselves, the very people who are paying for the new community."



PROPOSED NEW VILLAGE OF HILL N·H·

PERFORMITE

STANDARD SINCE 1932 FOR MUNICIPAL SIGNAL CABLES

5

Reasons Why PERFORMITE INSULATION Excels

1. *A guaranteed tensile strength of 1500 lbs./sq. in.*
2. *Does not corrode the conductor.*
3. *Resists heat and moisture (recommended for operation at conductor temperatures up to 167° F.)*
4. *Strips freely from the conductor.*
5. *Super aging—goes far beyond specification requirements in accelerated aging tests.*

Hazard Performite rubber insulation meets the requirements of many commercial wire and cable specifications for super-aging and heat resisting insulation, including International Municipal Signal Association 1937 specifications for "Underground and Aerial Cable for Fire Alarm, Police Telegraph, Traffic Signals and Street Lighting Service;" of Federal specifications J-C-106, "Cable & Wire; Rubber Insulated, Building Type, Super-aging Grade;" Federal specifications J-C-121, "Super-aging grade for other than Building purposes;" A.S.T.M. Specs, D-469, "Heat Resisting Rubber Compound."

Send for further information.

HAZARD INSULATED WIRE WORKS

DIVISION OF THE OKONITE CO.

WORKS: WILKES-BARRE, PENNSYLVANIA

New York Chicago Philadelphia Atlanta Dallas Washington Cleveland

Pittsburgh Buffalo Boston Detroit Seattle San Francisco St. Louis Los Angeles

Des Moines' New Airport

(*Continued from page 41*)

each side, slightly less than 180 degrees apart, so that the beam is thrown onto the runway, rather than exactly along the edge.

The green range lights are of the Westinghouse tip-over type, not being anchored firmly, so that if struck by a plane they are automatically cut out, but the circuit also closes automatically, so that the remainder of the lights go back into service. There is a total of 28 of these range lights at the ends of the runways.

A 36-inch Bartow beacon of 1,500 watts, operating on a 32-volt circuit, was supplied by Crouse-Hinds. With it is installed a code flasher, which signals the field letters D-M in green light in the Morse Code.

There is also an illuminated wind-sock 12 feet long. The field has a B. B. T. arc-type floodlight of 10,000,000 candlepower, which is used temporarily to light the field, before ships arrive, in order to see whether there are any automobiles or stray cattle on the field. A total of $12,000 worth of lighting cable has been used in making the installations at the field. This includes 76,000 feet of one size, and a total of 100,000 feet of underground cable supplied by the Paranite Cable Co.

Bids have already been taken for a 60-kw stand-by diesel generating set to handle the lighting in case of breakdown in the power supply from the city to the field.

Airport Service and Use

United Airlines is operating six scheduled stops per day at the Des Moines airport on its east-and-west run, the nearest airport at either end being Chicago and Omaha. There are five base operators at the port with school and charter service, including two Civilian Pilot Training Corps units. There is a total of 34 private airplanes based at the airport, and an average of 15 to 20 transient planes use the airport daily during the summer.

The Weather Bureau has its station on the second floor of the city hangar, which was added in 1933. There is a restaurant, and the C. A. A. Communications teletype and radio are located on this second floor. The gas and oil concession for the airport is given to the man who leases the city hangar. He supplies both pit and truck gas service to base and transient planes.

United Airlines has an 80 x 100-foot hangar with a 24-foot lean-to on one side containing the waiting room and office. Plans are under way in Iowa for the construction of a $200,000 National Guard hangar at the Des Moines airport.

The officials in charge of the Des Moines airport feel that it is much better to spend the city's money in establishing a basic landing field with adequate runways before a suitable administration building is built. Plans have already been prepared, however, for an administration building to be built on the east side of the port, but its construction is not in the present program.

The entire airport project at Des Moines is costing $1,700,000, of which $171,000 has been paid for the one square mile of land for the airport. Prior to January 1, 1940, only ten passenger Boeing planes of United Airlines landed at the airport, connecting with trans-continental planes at Omaha and Chicago. On January 1, 1940, the first Douglas transport plane landed, and since that date the service has been maintained regularly, except during and immediately after heavy snowstorms, which made landing on the runways hazardous.

Using agricultural discs pulled by a small tractor, heavy crusts on the runways have been quickly broken up, permitting the early landing of transport planes as well as lighter planes, and snow-plow equipment has been made available for clearing the runways where necessary. The Airport Superintendent feels that ordinary plowing of a runway is likely to create a hazard with the windrows of snow at the sides, and endeavor is being made to secure a plow of the rotary type which will throw the snow a considerable distance from the runway and distribute it uniformly over the open parts of the field.

Because of the elevation of the Des Moines airport, 960 feet above sea-level and over 200 feet above the Des Moines River, there is an almost complete freedom from fog. The airport is also far enough from the city so that it is clear of smoke, and the prevailing winds carry the smoke of the city away from the airport. At the times when the Des Moines airport has been closed because of fog, smoke or snow, practically all airports within many hundred miles radius have also been closed. The airport serves an immediate radius of 100 miles. A checking of the passengers using the regular airport service has shown that 34 per cent of those embarking at the airport are from outside the city. This indicates that the port is serving a large area effectively.

The Des Moines municipal airport is operated by the Department of Parks and Public Property of the city, under the immediate direction of Arthur E. Thomas, Airport Superintendent. The four construction photographs were furnished through the courtesy of the Iowa Works Projects Administration.

Water Softening

(*Continued from page 45*)

allowed to carry the load until the elevation has dropped several feet.

Since the new plant has been in operation there has been general enthusiasm over the quality and softness of the water. Prior to the construction of the new plant, the distribution system had to be flushed out twice a year with a fireplug opened from 45 minutes to an hour, before the line was clear. Now the system is flushed only once a year and requires only that a fireplug be opened wide and then immediately shut down. Leakage in this system has been reduced to about 30% with 100% metering.

The new plant was designed and built under the direction of Alfred LeFeber, consulting engineer, Cincinnati, Ohio. Joseph Hart is Superintendent of Water Works, and John E. Suedkamp is chemist in charge of the softening plant.

U.S. cast iron PIPE

Copyright 1940, U. S. Pipe & Foundry Co.

CAST IRON pit-cast pipe and cast iron Super-deLavaud centrifugally cast pipe are manufactured by this Company in our plants at Burlington, New Jersey; Bessemer and Birmingham, Alabama; and Chattanooga, Tennessee—where large stocks of pipe and standard fittings are available for prompt shipment. Smaller shipments can be made quickly from 14 shipping points throughout the country.

U. S. PIPE AND FOUNDRY CO.
General Offices: Burlington, N. J.
Plants and Sales Offices Throughout the U. S. A.

Water Rates and Service Charges

1940—Part V

Covering Domestic and Industrial Meter Rates, Discounts and Penalties, Installation Charges, Fire Hydrant Rentals and Fire Sprinkler Costs

Duquesne, Pa.

Present population	22,000
Population served	22,000
Number of active services	3,300
" " meters	3,300
" " hydrants	175
Miles of water main	25

A uniform water rate of 30c per 1,000 gals. applies to all services, domestic, commercial and industrial. If the bill is not paid in 15 days, 5c is added to the rate per 1,000 gals. The city donates 1,000 gals. per month free to all churches. There is no charge for any municipal use of water.

A new consumer desiring a water service makes application at the office of the Water Department and pays the cost of the tap, which is laid by the city from the main to the curb. The cost of the tap varies in accordance with the width of the street and is from $17.50 to $27.00 for a ¾" tap on an unimproved street. A charge of $10 is added for installing services in improved streets.

In accordance with its policy, there is no charge for fire hydrants for public fire protection, and there are no charges for sprinklers for private fire protection.

E. Forrest Williams,
Superintendent, Water Department.

Geneva, N. Y.

Present population	18,000
Population served	20,000
Number of active services	4,000
" " meters	4,000
" " hydrants	400
Miles of water main	45

The minimum charge for water per quarter in Geneva, is $1.50, for which 800 cu. ft. is allowed. Regular rates:

First 1,300 cu. ft.	$ 25	per 100 cu. ft.
1,300 to 14,300 cu. ft.	13	" " " "
All over 14,300 cu. ft.	06	" " " "

If bills are not paid on or before the 1st of the month following the date of issue, 5% is added and 1% additional is charged for every month thereafter until the bill is paid.

Prospective consumers desiring water service must make application at the Water Department office and sign a special permit. The cost of the installation of all water services must be paid by the property, which usually employs local registered plumbers for the work.

There is no charge for either public or private fire hydrants installed on the mains, nor for sprinkler heads for private fire protection.

J. W. Brennan,
Superintendent, Water Department.

Ridgway, Pa.

Present population	7,000
Population served	7,500
Number of active services	1,503
" " meters	1,499
" " hydrants	125
Miles of water main	11½

Water bills are rendered semi-annually in Ridgway, with a minimum charge of $3.00 on each billing. The water rates are:

First	5,000 gals.	$ 20	per 1,000 gals.
Next	10,000 "	17	" " "
"	15,000 "	15	" " "
"	20,000 "	13	" " "
"	150,000 "	11	" " "
"	200,000 "	09	" " "
Remainder		06	" " "

Ten per cent is added to the water bill if not paid on or before the 16th day of the month in which the bill is rendered, and then service may be discontinued if the bill is not paid by the 1st of the following month.

There are no rentals charged for either public or private fire hydrants, nor for sprinkler head installations for private fire protection.

The Ridgway Borough Water Works charges $3.25 for tapping the water main for a new service, plus the cost of the gooseneck required. The consumer pays the local plumber for the cost of the balance of the installation.

A. C. Wethill,
Water Commissioner, Ridgway, Pa., Borough Water Works.

Ravenna, Ohio

Present population	8,400
Population served	8,300
Number of active services	2,350
" " meters	2,350
" " hydrants	220
Miles of water main	30

The minimum rate for any service with a ⅝" meter in Ravenna is $2.50 per quarter. All bills must be paid by the 10th of the month in which rendered. The water rates are:

	Per 1,000 Cu. Ft.
First 2,000 cu. ft. per month	$2 20
Next 18,000 " " " "	1 60
" 20,000 " " " "	1 10
Over 40,000 " " " "	80

The charge for the installation of new services by the Ravenna Water Works is $20 from the main to the curb box. A renewal of the service is made for a charge of $15. New meters for new services are billed direct to the consumer at $11 each.

There are no rental charges for public or private fire hydrants, and no charges for automatic sprinklers for private fire protection.

Wilbur Zoll,
Service Director, Ravenna Water Works.

Menomonie, Wis.

Present population	5,595
Population served	5,000
Number of active services	1,600
" " meters	1,600
" " hydrants	180
Miles of water main	40

The water rates of Menomonie start with a 6 months' demand charge, or minimum charge, of $4.00, which permits the use of 1,800 cu. ft. of water without additional cost. Water used above that amount is billed as follows:

Next	600 cu. ft.	$ 22	per 100 cu. ft.
"	3,000 " "	19	" " " "
"	100,000 " "	12	" " " "
"	100,000 " "	07	" " " "
Over	205,400 " "	035	" " " "

A penalty of 10% is charged on all bills not paid before 12 o'clock noon 10 days from the date of the bill. If not paid by 12 noon on the 20th day of the month, service is discontinued and not restored until all charges due are paid, together with a reconnection charge of $2.00.

All bills for metered water services are payable July 1 and January 1 for service supplied during the preceding 6 months. If a consumer makes written request that he be exempt from the responsibility for bills incurred by his tenants or tenant, each such tenant is required to make a deposit of $5.00 with the utility, except that tenants who are connected at the time of the receipt of such a request are not required to make a deposit as long as they are not in arrears for service. In case a disconnection is ordered within 12 months from the time of requiring the deposit, $2.00 of such deposit is retained by the utility as the expense of the disconnection.

Meters are furnished and placed by the water utility. In case a meter seal is intentionally or carelessly broken, or the meter is intentionally or carelessly dam-

Does your City have a backyard to play in?

CLEAN lakes and streams—free of pollution—close at hand—*there's* the back yard for *all* the citizens of your community. There's where they can swim, fish, and picnic—out in the fresh air and healthful sunshine—and during a good part of the year.

Can You Afford Not to?

It costs as little as one penny a day per person to operate a modern sewage-disposal plant by means of which dangerous, destructive wastes are rendered harmless, and the waters adjacent to the community are kept clear, pure, and safe for all.

One reason for this low cost, of course, is the extensive use of electric equipment in these plants. Naturally, the equipment must be properly selected, applied, and co-ordinated. And that's just what G-E engineers have done for sewage-disposal plants, large and small, all over the country.

Why Not Investigate?

Whatever *your* special requirements, they will be glad to do the same for you, working closely with your city engineers, consulting engineers and contractors to assure the most efficient, economical operation possible. General Electric, Schenectady, N.Y.

GENERAL ELECTRIC

011-581

aged, or the working parts of the meter are tampered with, the utility renders a bill to the consumer for the current period based on the average of the last two periods. A reconnection charge of $1.50, payable in advance, is made to a consumer not in arrears, who has contracted for yearly service, and requested discontinuance of the service within the year and then requests reconnection. If a consumer's service has been disconnected at his request prior to the expiration of his contract period, and he is immediately connected at another location, a charge of $1.50 is made for the removal of the meter from one location to the other.

No water may be taken from the city mains without a permit. A person desiring water service from the utility makes a written application by signing a contract in which he states the use or uses for which the water is desired, and agrees to install all service pipe from the water main at his own expense, and to commence payment for such service within one month from the time of tapping the main. Upon the execution of the contract, a permit is issued to the applicant, by the Superintendent, for taking water from the city main. Special authorization for tapping the mains and making a connection with any water main or distribution pipe must be secured from the Superintendent. The water main is tapped at the expense of the applicant, and all pipes and fittings, including the curb box and necessary connections, are furnished, installed and maintained at the expense of the consumer. The applicant must pay a tapping charge of $1.50.

The city of Menomonie pays $7,750 per year to cover the use of the mains and fire hydrants on the system as existed on July 1, 1932. Extensions of fire-protection service, added since that date, carry a charge of $50 per year for each hydrant added. Water used in street flushing, sprinkling, sewer flushing and flooding skating rinks is estimated by the Superintendent and billed to the city at 5c per 100 cu. ft. Schools and other municipal buildings are supplied on a meter basis.

J. E. JOHNSON,
Superintendent, Menomonie Water Works.

Alamosa, Colo.

Present population	5,500
Population served	1,833
Number of active services	800
" " meters	825
" " hydrants	140
Miles of water main	14

The meter rates for consumers within and outside the city limits of Alamosa, Colo., are:

	Per 1,000 Gals Inside City	Outside City
From the first 2,000 to 5,000 gals. per month	$ .27	$ .32
" " " 2,000 " 10,000 " " "	.25	.28
" " " 2,000 " 20,000 " " "	.18	.25
" " " 2,000 " 60,000 " " "	.15	.18
In excess of 60,000 per month	.12	.12

The minimum monthly charge within the city is $1.25, and outside $1.75. Summer rates, subject to the approval of the City Council each year, are:

First 2,000 gals. per month	$1.25
Next 1,000 " " "	.25 per 1,000 gals.
Balance at the rate of	.10 " " "

Summer rates apply only to users of city water for the purposes of watering lawns and gardens. Special contracts with industrial users are handled by the City Council.

On the application for a new service, the customer must furnish the City Clerk with the necessary data on the location, block, lot and street number, together with a deposit to cover the cost of the installation. No service is permitted to be put into use until the full amount of the cost has been paid. The charges for installation of services are $21.00 for the regulation service with a 5/8" meter, $27.50 for a 1" meter, and larger sizes at actual cost.

All water rates are due monthly on the first day of the succeeding month. If not paid on or before the 15th, the water is shut off until all payments have been made together with a fee of $1.00 for turning on the water.

For many years no definite charge has been made for private fire hydrants and automatic protection equipment. It is thought right and proper that a hydrant tax should be made in any city. In Alamosa half of the population is supplied by its own artesian wells, so that they do not pay for water in any way, nor for street sprinkling and fire protection, all of which are furnished by the city. These services cost the city about $200,000 a year, and the entire burden falls on the users of city water, as the profits from the Water Department take care of these other city services.

R. C. BOLLIER,
Superintendent, Water & Sewer Department.

Greenville, N. C.

Present population	14,000
Population served	14,000
Number of active services	2,031
" " meters	2,031
" " hydrants	144
Miles of water main	23

The Water Department of Greenville has one schedule "M" for water, and this is available to all domestic, commercial, and industrial water services. Each dwelling, apartment and store is required to have a separate meter. On old services, where one meter is serving more than one dwelling, apartment, or store, the minimum rate is $1.00 per dwelling, apartment, or store served. The rates are:

First 400 cu. ft.	$1.00 (minimum bill)
Next 2,000 " "	.15 per 100 cu. ft.
All excess	.08 " " " "

The charge for making taps for various size services within city limits and outside city limits are as follows:

	In City Limits	Outside City Limits
3/4" water tap	$15.00	$30.00
1" " "	21.00	42.00
1 1/2" " "	40.00	80.00
2" " "	60.00	120.00
All taps larger than 2"	Cost of labor and material, plus 10%.	

The charge for rental of public and private fire hydrants is $4.00 per month per hydrant. There are no charges for sprinkler heads for private fire protection.

M. SWARTZ,
Superintendent, Water Department.

Bradenton, Fla.

Present population	7,500
Population served	7,500
Number of active services	1,500
" " meters	1,500
" " hydrants	250
Miles of water main	50

The minimum charge per month for metered water in Bradenton is $1.50, which allows the use of 3,000 gallons. Above that amount the following rates are in force:

First 4,000 gals.	$2.00
	Per 1,000 Gallons
Over 4,000 gals. to 10,000 gals. incl.	.25
" 10,000 " " 20,000 " "	.20
" 20,000 " " 30,000 " "	.18
" 30,000 " " 500,000 " "	.15

A sprinkling rate for lawns charges 10c per 1,000 gals. for all over 6,000 gallons used for this purpose.

Applications for a meter or a water service are made to the City Clerk, accompanied by a check for the charges required. A 3/4" service costs $15 and a 1" service $25. All other services are charged at cost.

There are no hydrant rentals or charges for sprinkler systems for fire protection.

G. D. ARMSTRONG,
Commissioner of Public Works.

Greenfield, Mass.

Present population	17,000
Population served	17,000
Number of active services	3,686
" " meters	3,680
" " hydrants	586
Miles of water main	72.9

There is a service charge and also a charge for water used in Greenfield. The quarterly charge for water used is:

First 10,000 cu. ft.	$ .12 per 100 cu. ft
Next 90,000 " "	.09 " " " "
All over 100,000 " "	.06 " " " "

Services regularly drawing over 100,000 cu. ft per quarter may be billed monthly.

For each service where water is sold by meter there is a flat service charge per quarter as follows, depending on the size of the meter:

5/8" meter	$ .75
3/4" "	1.25
1" "	2.25
1 1/4" "	2.50
1 1/2" "	4.00
2" "	6.00
3" "	10.00
4" "	15.00
6" "	30.00

Where water is sold by meter for use outside the town, or is to be transported inside or outside the town, there is a quarterly charge in addition to the flat charges, as follows:

First 10,000 cu. ft.	$ .12 per 100 cu. ft.
Next 90,000 " "	.09 " " " "
All over 100,000 " "	.08 " " " "

The town of Greenfield installs all water services free of charge to the consumers. There are no hydrant rentals for private or public fire hydrants, nor are there any charges for sprinkler head installations installed for private fire protection.

H. L. FIELD,
Superintendent, Water Department.

Tight Joints

Easy to Handle

Low Breakage Expense

Resists Soil Acids

A complete, modern organization is devoted exclusively to the manufacture of fibre conduit. Daily laboratory tests and careful production inspections account for a high grade, uniform Fibre Conduit.

LM

prevent seepage of wet concrete when installing conduit

for Economical, Complete and Permanent Protection

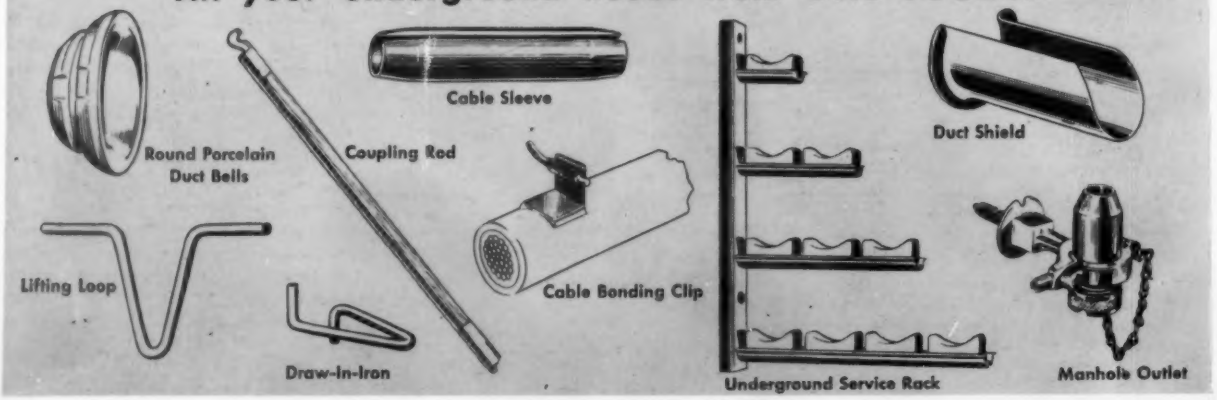
Engineers Recommend

FIBRE CONDUIT

LINE MATERIAL CO.

MILWAUKEE • WISCONSIN

All your underground needs from ONE SOURCE



Putnam, Conn.

Present population	7,800
Population served	7,200
Number of active services	1,368
" " meters	62
" " hydrants	136
Miles of water main	25.12

Meters are installed on services for hotels, livery stables, photo galleries, liquor saloons, boilers, laundries, railway station and tank, mills, motors, schools and convents, city building, and on other services at the discretion of the Water Commissioners. Water is furnished at the following rates, provided, however, that in no case where a meter is used shall the charge be less than the minimum rate for that size of meter whether the meter registers less than that amount or not; and provided, also, that no consumer shall be charged more for the water at any given rate than a larger quantity would cost under this schedule. The rates are:

	Maximum
Less than 1,000 gals. per day $.25 per 1,000 gals.	$6.00
1,000 to 5,000 gals. per day $.20 per 1,000 gals.	26.25
5,000 to 10,000 gals. per day $.175 per 1,000 gals.	45.00
10,000 to 20,000 gals. per day $.15 per 1,000 gals.	75.00
More than 20,000 gals. per day $.125 per 1,000 gals.	.....

Water rates are payable quarterly and are due on the first day of each quarter. The Water Commissioners bill the water at a 20% discount on current bills where there are no arrears.

If the quantity of water used registers less than the minimum rates for the meters, the consumer is charged the minimum prices listed below:

⅝" meter	$6.25 per quarter
¾" "	6.88 " "
1" "	7.50 " "
1½" "	9.38 " "
2" "	12.50 " "

When water is supplied to more than one party through a single tap, or meter, the bill for the whole supply furnished through this tap, or meter, is made either to the owner of the estate, or to some one tenant who agrees to be responsible for the bill. In case of non-payment the water is shut off, even though one or more of the parties served by that tap, or meter, may have paid their proportion of the charges to the owner or responsible tenant.

Application for water services must be made at the office of the Water Commissioners on blank forms which are furnished and must be filled out, stating truly and fully the various uses to which the water is to be applied, and must be signed by the owner or owners of the premises, or by their duly authorized agent, before the supply will be furnished. The service pipe is laid by the Water Department to the inside of the cellar wall, or other place desired, and furnished with a stop and waste cock. All service pipe within the street limits is laid at the expense of the Water Department, and the owners of the premises must pay for all pipe within the limits of their property. No service is laid where the annual income from water used is less than $7.50.

A charge of 75c is made where the Department is requested to shut off the supply of water. Service that has been shut off under such circumstances is restored at the property owner's request without further charge. In a case of violations of any of the regulations established by the Water Commissioners, or for non-payment of rates within 30 days after they are due, the supply may be cut off from a premises in default, and the water is not turned on again until all causes of complaint have been removed and the bill paid, with an additional payment of $2.00 for turning on the water.

There is no charge to the city for the installation, maintenance and supplying of water to public fire hydrants. The basis for charges for serving automatic sprinkler installations for private fire protection is the 1,000 square feet of area protected. The rate is $1.25 per 1,000 square feet.

DAVID FAHLSTROM,
Superintendent, Water Department.

Litchfield, Ill.

Present population	7,000
Population served	7,500
Number of active services	1,469
" " meters	1,469
" " hydrants	167
Miles of water main	27

The minimum charge per month for water services in Litchfield, Ill., is $1.00. The regular schedule of rates is:

First	6,000 gals.	$.50 per 1,000 gals.
Next	4,000 "	.45 " " "
"	15,000 "	.40 " " "
"	200,000 "	.35 " " "
All over	225,000 "	.12 " " "

A discount of 10% is allowed on all bills if paid on or before the 10th of the month when issued or 10 days after rendition of the bill if billed between the first and last days of the month.

The application for water service indicates the type of use of the water and shows the number of feet of service line which must be installed by the Water Department, together with the size of the tap, and the exact location of the property to be served. The charge for the installation of water services by the Department is the cost of labor and material, plus 20% for the tap and the service to the property line.

There is no rental charge made for public fire hydrants, nor for sprinkler heads for private fire protection.

A. G. KLEINBECK,
Collector, Litchfield Water Department.

Vancouver, Wash.

Present population	23,000
Population served	26,000
Number of active services	5,500
" " meters	5,625
" " hydrants	211
Miles of water main	92.7

The quantity rates for water supplied to residential and commercial metered services in Vancouver, Wash., are:

First	3,000 cu. ft.	$.225 per 100 cu. ft.
Next	3,500 " "	.15 " " " "
"	7,500 " "	.11 " " " "
Over	14,000 " "	.075 " " " "

The minimum monthly charges per meter, based on the size of the connection, are:

½" and ¾" service connection	$1.00
1" service connection	1.75
1¼" to 3" service inclusive	2.00
2½" " 3" " "	3.50

Over 3"—$1.50 per inch diameter or fraction thereof.

A special schedule of rates, available only to residential consumers, applies during the summer months, where the consumer occupies a detached residence, duplex or double house, or flat, where each apartment or dwelling place has its own individual meter. This special sprinkling or irrigation rate is available in May, June, July and August. All consumption in excess of 600 cu. ft. per meter per month receives a discount of 60% from the regular rate shown in the residential metered schedule.

The schedule of rates for industrial metered service is as follows:

First	3,500 cu. ft.	$.22 per 100 cu. ft.
Next	3,500 " "	.15 " " " "
"	7,000 " "	.11 " " " "
"	14,000 " "	.07 " " " "
All over	28,000 " "	.025 " " " "

The minimum monthly charge on the industrial metered service depends on the size of the service pipe, as follows:

½" and ¾" service pipe	$1.00 per month
1" service pipe	1.75 " "
1¼" to 2" service pipe	2.00 " "
2½" " 3" "	3.50 " "

3½" or over $1.50 per inch diameter or fraction thereof per month.

All water supplied to any property connected with the city mains is billed to the applicant and against the property so supplied. All charges for turning water on or off, and all fines and penalties, or other charges, assessed or imposed under the ordinance creating the Water Department, or in the rules of the Water Department, are charged to the applicant and against the property for which the service was rendered, or the fine or penalty imposed. All rates, charges, fines and penalties are paid to the City Treasurer and placed to the credit of the water fund.

All meters furnished, and all materials supplied, by the Water Department in the installation or repair of any meter or meters, and all materials supplied in the installation of any service connection with the city mains, or in tapping any city main, remain the property of the city, and may be removed by the Water Department at any time for the non-payment of any charge or installment due.

A prospective consumer desiring water service must apply at the office of the Water Department, and the application must be signed by the owner or lessee of the property, or the authorized agent, and must state all the purposes for which the water is to be used, the number of service pipes desired, whether there is to be more than one separate property supplied by the one service connected with the city main, and the number and kind of buildings and properties so supplied, the number of flats or apartments in the building, the location where the city main is to be

Barrett
Tarvia
GOOD ROADS
AT LOW COST

Smooth, skid-safe TRACTIONIZED Tarvia pavement is easy to ride on, easy to build . . . and easy to pay for.

THE BARRETT COMPANY

New York . . . Chicago . . . Birmingham . . . St. Louis . . . Detroit
Philadelphia . . . Boston . . . Providence . . . Lebanon, Pa.
Rochester . . . Baltimore . . . Minneapolis . . . Cleveland . . . Columbus
Toledo . . . Youngstown . . . Syracuse . . . Hartford . . . Buffalo
Cincinnati . . . Bethlehem . . . Portland, Me. . . . Norwood, N. Y.
In Canada: THE BARRETT COMPANY, LTD.
Montreal . . . Toronto . . . Winnipeg . . . Vancouver

. . . one of America's Great Basic Businesses

Do you mention THE AMERICAN CITY? Please do.

tapped, and the size of tap to be made, the location of the property by lot, block, addition and street number; and, further, it contains an agreement that the applicant will at all times conform to the rules and regulations of the Water Department. The same provisions care for applications for standpipe and sprinkler service.

All service pipes from the city main, or from other service pipes to the property line, including the service cock placed one foot inside the curb line, are installed and maintained by the city. Where areas have been excavated under the sidewalk, the service pipes are laid by the city only to the inside of the area wall. The property owner must install and maintain at his own expense all service pipes and all plumbing within his own premises.

Where water is turned off for any reason or infraction of the ordinance or rules, it is turned off wherever possible at the curb cock and not turned on again until the provisions of the ordinance or rules have been complied with. After water has been turned off at the curb cock, it is not turned on again without the consent of the Water Department, but if such is done, the water is immediately shut off at the main and a charge of $15 made for cutting off and turning on. The ordinary charge for turning off and turning on is $5.

The rates for fire protection services are on a monthly basis in Vancouver. The charge is $2.50 per month for each 4" standard hydrant having two 2½" Pacific hose connections and one standard steamer connection, or two 2" Pacific hose connections and one standard steamer connection. The charge is $2.50 a month for each hydrant or standpipe equipped with two 2½" Pacific hose connections, or two 2" Pacific hose connections without steamer connection. The charge is $2.50 per month for each hydrant or standpipe equipped with one 2½" Pacific hose connection and no steamer connection. The charge is $2.00 per month for each hydrant or standpipe equipped with smaller than 2½" hose connection, without a steamer connection.

There is no ordinance covering charges for fire services other than the regular meter minimum, and all fire services are metered.

REX R. OSBORN,
Superintendent, Vancouver Water Department.

Independence, Kans.

Present population	11,000
Population served	11,000
Number of active services	3,500
" " meters	3,500
" " hydrants	200
Miles of water main	35

The water rates in Independence are 50c for the first 500 gals. used per month, and then the following rates are in effect:

Next	4,500 gals.	$ .30	per 1,000 gals.
"	5,000 "	.25	" " "
"	10,000 "	.20	" " "
"	30,000 "	.15	" " "
"	50,000 "	.12	" " "
"	400,000 "	.10	" " "
"	500,000 "	.09	" " "
Over	1,000,000 "	.08	" " "

When a prospective consumer makes application for service, a deposit of $4.00 is required to guarantee the payment of the monthly bill. There is no charge for the installation of water services from the main to the property, this being borne by the Water Department.

There are no rentals for either public or private hydrants, and no charge is made for sprinkler head installation for private fire protection.

J. C. GORDON,
Superintendent, Water Department.

Bellevue, Ohio

Present population	6,250
Population served	6,000
Number of active services	1,750
" " meters	1,600
" " hydrants	148
Miles of water main	35

The minimum charge applying to all services in Bellevue is $14.00 per year, payable quarterly in advance. The first 700 cu. ft. of water is billed at $3.50. Additional water is billed as follows:

Next	6,600 cu. ft.	$ .12	per 100 cu. ft.
"	6,700 " "	.105	" " " "
"	6,700 " "	.09	" " " "
"	6,700 " "	.075	" " " "
All over	27,400 " "	.056	" " " "

A consumer desiring water service must make application for tapping the city water main, at the office of the Director of Public Service. He must agree to pay for the service installed by the city and then to have the plumbing and connections made in accordance with the rules and regulations of the Water Department, at his own expense. The charge for the installation of a domestic service is $23.

The charge for public fire hydrants is $1.00 per year per hydrant, paid quarterly. There is no charge for sprinkler heads connected to fire services for private fire protection only.

G. A. WILLIAMS,
Director of Public Service, Bellevue, Water Works Department.

Olney, Ill.

Present population	7,500
Population served	5,000
Number of active services	1,388
" " meters	1,386
" " hydrants	183
Miles of water main	18 3

Some explanation is probably needed of the population figure, as the 1930 U. S. Census showed the population to be 6,140. In 1937, however, an oil field opened up in the vicinity and the population increased rapidly. The Post Office estimates the present population at around 8,000.

The monthly water rates are the same for domestic or industrial consumers, and are as follows:

First	12,500 gals.	$ .50	per 1,000 gals.
Next	10,000 "	.45	" " "
"	30,000 "	.35	" " "
"	50,000 "	.25	" " "
"	397,500 "	.20	" " "
All over	500,000 "	.15	" " "

Bills are payable at the City Hall, and a 2½% discount is allowed if paid on or before the 10th of the month.

Upon application by a consumer, the city makes the tap in the main and then a plumber runs the service line to the property, the owners paying all the expense. Copper and lead pipe are used on small serives, and cast iron on 1¼" to 2" servftes. The charges made by the city for services are:

¾" copper service	$3 00
1" " "	4 60
¾" lead gooseneck	5 00
1" " "	7 50

Other large connections are billed at actual cost.

The rentals for public fire hydrants are $24 per year, and are paid to the Water Department from tax appropriations. There are no charges for sprinkler heads, as there is only one installation, an International Shoe Co. factory.

O. D. SLICKENMYER,
Superintendent, Olney Water Works.

Midland, Pa.

Present population	7,000
Population served	7,000
Number of active services	880
" " meters	1,250
" " hydrants	50
Miles of water main	8

Bills for water used are payable quarterly at the following rates:

First 3,000 cu. ft. or less	$ .30 per 100 cu. ft.
Next 30,000 " " "	.20 " " " "
Additional water used	.10 " " " "

The minimum charges per quarter are based on the size of the meter and permit the use of the quantity of water shown below:

Size of Meter	Quarterly Minimum Charge	Quantity Allowed in Cu. Ft. per Quarter
⅝"	$3 00	1,000
¾"	4 50	1,500
1"	7 50	2,500
1¼"	12 00	4,500
1½"	18 00	7,500
2"	30 00	13,500
3"	66 00	31,500
4"	120 00	84,000
6"	360 00	324,000

Consumers using water at a greater rate than 11,000 cu. ft. per month are billed a special monthly rate, as follows:

First 1,000 cu. ft.	$ .30 per 100 cu. ft.
Next 10,000 " "	.20 " " " "
Additional water used per month	.10 " " " "

Prospective consumers desiring water service must make written application at the office of the Midland Water Co. There is no charge for the installation of new services, nor for the meter installed on the consumer's property.

Public fire protection service is payable by the municipality quarterly, in advance, as follows:

For each mile of main 4" in diameter or greater	$516 00 per year
For each fire hydrant	8 00 " "

There is no charge for sprinkler head installation for private fire protection, as all fire lines are metered.

H. F. HOLLOWAY,
Manager, Midland Water Co.

1 This bridge into the village of Gahanna (Population 600) was the logical route for the water supply line to follow. The light weight of "Century" Pipe simplified the problem, while its strength and the use of "Century" Flexible Couplings enable the line to withstand the inevitable strains and vibration.

THANKS TO *"Century"* ASBESTOS-CEMENT PIPE, GAHANNA, OHIO, NOW HAS A COMPLETE WATER SYSTEM

FOR domestic, civic and industrial purposes many thousands of small towns want their own water systems. Cost is often the stumbling block, as it was in Gahanna, Ohio—not only the first cost, but the threatening shadow of pipe line maintenance in years to come.

Yet the Board of Trustees of Public Affairs of Gahanna found a way to provide their community with a complete system at a first cost within their reach, and with the assurance that maintenance of the pipe lines will never prove a burden on the budget.

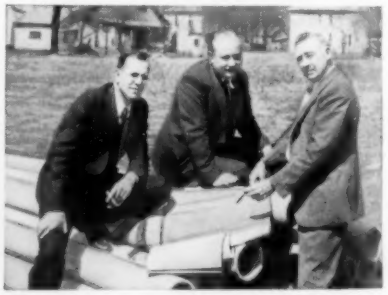
They used "Century" Asbestos-Cement Pressure Pipe for both supply and distribution lines, 18,070 feet of pipe in all. They knew that "Century" Pipe is economical at the start, so easily handled and laid that it keeps installation cost low, and so enduring that it lastingly guards against the need for costly maintenance.

"Century" Pipe is light in weight, but has great strength. It can never tuberculate or corrode. It is easily cut in the field. Its "Century" Flexible Couplings are readily installed and are permanently leak-proof.

Write Keasbey & Mattison, insulation specialists since 1873, for free illustrated catalogue, "Mains without Maintenance." Address Dept. 1017.

2 Lowering three coupled lengths of 8" "Century" Pipe into a trench. Note the ease with which this is accomplished due to the light weight of the pipe. "Century" Flexible Couplings are readily installed either in the trench or on top.

3 Springs keep this land swampy, and a culvert drains into the open trench. No danger of corrosion with "Century" Pipe even under conditions like this. And "Century" Flexible Couplings were applied right in the water-filled trench, where poured joints would be next to impossible.



4 Mr. M. G. Davis, Mr. Ralph Margrum, and Mr. Charles A. Pegler, the three members of the Board of Affairs responsible for the selection of "Century" Asbestos-Cement Pressure Pipe for the water supply system of Gahanna. The economy and trouble-free service obtained will be proving the wisdom of that choice in generations to come.

KEASBEY & MATTISON

COMPANY, AMBLER, PENNSYLVANIA

Forward Steps

Reported by Municipal Officials, Chamber of Commerce Executives, and Others

Liberty's New Municipal Building

LIBERTY, TEXAS.—Liberty's streamlined municipal building, combining city hall and auditorium, provides a city council chamber, and quarters for the Mayor, the City Secretary, the Tax Department, the City Water and Sewer Department, the City Light and Power Department, the Superintendent of Utilities, and the local Chamber of Commerce.

An Important Asset for Liberty, Texas

The large auditorium, seating 500 people, is furnished with knockdown tables and folding chairs. Adjoining is a kitchen in which food can be prepared for the numerous banquets held in the auditorium.

Built as a Work Projects Administration undertaking, the building—which is shown in the accompanying illustration—cost a total of $38,500, including furniture and fixtures. The city contributed $21,500 of this amount.

BRADFORD PICKETT,
Mayor.

Pulling Business by Free Parking

BEVERLY HILLS, CALIF.—What the Beverly Hills Chamber of Commerce has done in dealing with the local parking situation is the story of a temporary measure that will serve until plans for permanency are perfected.

Owners of vacant lots in the central business district have been sold the idea that they can aid themselves by donating the use of their lots to the Chamber for free parking. It has been pointed out to them that their lots will remain vacant until more trade can be attracted there, thus creating a demand for added buildings.

As a result, we have the equivalent of 32 lots, 50 x 150 feet, with capacity for approximately 700 vehicles. The lots have been graded, covered with decomposed granite, and equipped with signs which tell the public that parking is free. There has been no cost to merchant or property owner for this accommodation. Owners donated the use of the lots; the city did the grading without cost; a local civic leader gave the granite from his property; and the Chamber of Commerce, from its Merchant's Bureau fund, paid for insurance and signs.

This free parking facility has been most valuable. It has attracted much new business—so much that several new buildings have arisen. A survey of the December business showed increases ranging from 5 to 50 per cent.

Realizing that adequate parking will be a determining factor in the future prosperity of every business district, we are trying to find some practical plan for permanently acquiring property for free parking. Two ideas are being considered: one, to condemn a 100-foot strip through the center of every block; the other, to acquire parcels of property in the various sections of the business district. The financing would incorporate an intent to form an assessment district, spreading the cost over a long-term period upon the property owners.

Both the property owners and the city officials are in sympathy with our intent, realizing that shopping centers will shift to where adequate parking is available. Owners know that the value and rental pull of their property hang in the balance. The city sees that if these decrease, tax collections will suffer.

J. O. SMITH,
Secretary-Manager, Beverly Hills Chamber of Commerce and Civic Association.

Baltimore's Tourist Development Bureau Program

BALTIMORE, MD.—The 1939 activities of the Tourist Development Bureau of the Baltimore Association of Commerce are listed in the Annual Report Section of the February issue of "Baltimore," published by the Association:

The production of a 30-minute motion picture, in sound and color, was undertaken by the Association last year. The film will portray the attractions and advantages of Baltimore and also a number of scenes in other parts of the state. When completed, it will be shown throughout the country before school and church groups, civic clubs, patriotic and fraternal societies, chambers of commerce and other organizations.

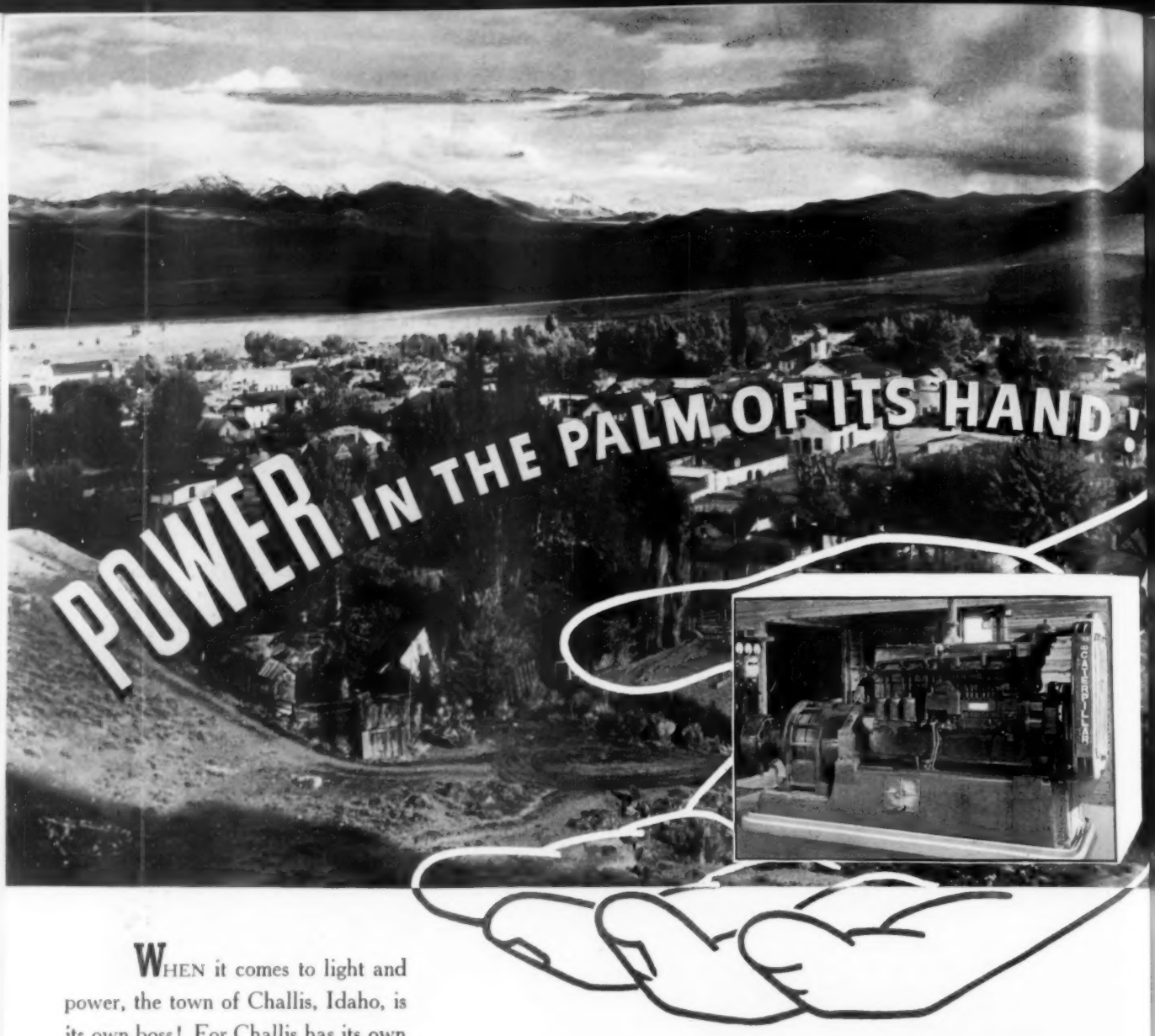
Nearly 325,000 pieces of tourist literature on Baltimore and Maryland were distributed in 1939 by direct mail and to travel agencies, transportation companies, convention organizations, chambers of commerce and other agencies. Besides the pamphlets and maps considered as standard tourist literature, the Association published two new folders, "Springtime in Maryland" and "Visit Maryland This Fall," which were distributed principally in communities east of the Mississippi River.

The Association continued to operate a tourist information office at 404 St. Paul Street. During the course of the year, 8,844 persons—an increase of 20 per cent—called at the office for information on Baltimore. Of this number, there were 6,039 visitors from 21 foreign countries and 47 states, and 7,501 mail inquiries from prospective tourists, an increase of 10 per cent over last year, were handled in 1939.

The Redbuds of Wichita

WICHITA, KANS.—Five miles of redbud trees were planted in Wichita on Arbor Day, March 29. They were not stretched out to that length, but that is the distance they would have covered, says the editor of the *Wichita Magazine,* published by the Chamber of Commerce, if the 5,000 seedlings planted by the boys and girls of the intermediate schools in their own yards and elsewhere had been spaced out to form a "redbud trail." Viewed lengthwise or in bunches, it was truly a great accomplishment and a splendid example of cooperation and civic enterprise through the joint efforts of the Chamber of Commerce, the Park Board, public schools and civic clubs, and the Mt. Hope Nursery and the Hillside Nursery, which furnished the seedlings at cost to the children in 34 schools. No child was left out because of not having the 5 cents involved, and it is felt that the fact that they paid this small amount gave them a special sense of responsibility. The seedlings were planted in the pupil's own home yards, according to mimeographed instructions furnished by the Chamber of Commerce with text by the Park Board.

A very important part was taken by the Girl Scouts in this intensive plant-



WHEN it comes to light and power, the town of Challis, Idaho, is its own boss! For Challis has its own "Caterpillar"-powered Electric Set—assisted by small auxiliary stand-by engines—to supply electric current for all private and municipal needs!

Four days out of every week, the "Caterpillar" Diesel D13000 Engine, direct-connected to an electric generator, works a steady 24-hour day—using *only* 3 3/10 gallons of 10c fuel an hour. On the other three days, it has a 12-hour duty during the heavy-load periods; with the auxiliaries "taking over" for the lighter work.

It's a demanding schedule. But "Caterpillar" Diesels are built for tough jobs! Advanced in design and constructed of precision-made, rugged materials, some of these engines have worked well over 20,000 hours with a minimum of maintenance-repair cost!

Even if your city doesn't need its own light-and-power plant, there are probably *other* jobs where you can use the fuel-economy, dependability and long life of a "Caterpillar" Diesel!

See your nearest "Caterpillar" dealer, or write direct to the factory for further information on low-cost heavy-duty municipal power.

CATERPILLAR TRACTOR CO., Peoria, Illinois

CATERPILLAR

REG. U.S. PAT. OFF.

DIESEL ENGINES AND ELECTRIC SETS • TRACK-TYPE TRACTORS • ROAD MACHINERY

ing program launched by the Chamber of Commerce. Learning of the organization's desire to make of Wichita in future years the "Redbud City of the Southwest," E. F. Weaver, horticulturist and nursery owner, offered to donate 1,580 young trees to be distributed among the Girl Scouts of the city.

On a pleasant Saturday morning in March, each girl, meeting with her neighborhood troop, was given a tiny redbud, together with a detailed sheet of instructions written by Mr. Weaver, explaining how to plant and care for the trees. Special attention was called to the methods of retaining enough moisture to protect the young trees in the dry climatic conditions and the Bermuda grass found in Wichita.

The girls were allowed to plant their trees either in their own yards or around the schools and churches where they assemble for Girl Scout activities. Occasional reports to their troop leaders on the progress of the young trees will be required.

The redbuds, carefully pruned and now ranging from two to four feet in height, were tended at the Weaver nursery for four years before being turned over to the Girl Scouts. It is hoped that, five years hence, Wichita may hold an impressive redbud festival to recognize the beauty in the misty pink clouds of blossom lining the streets.

MARGARET HYDE.

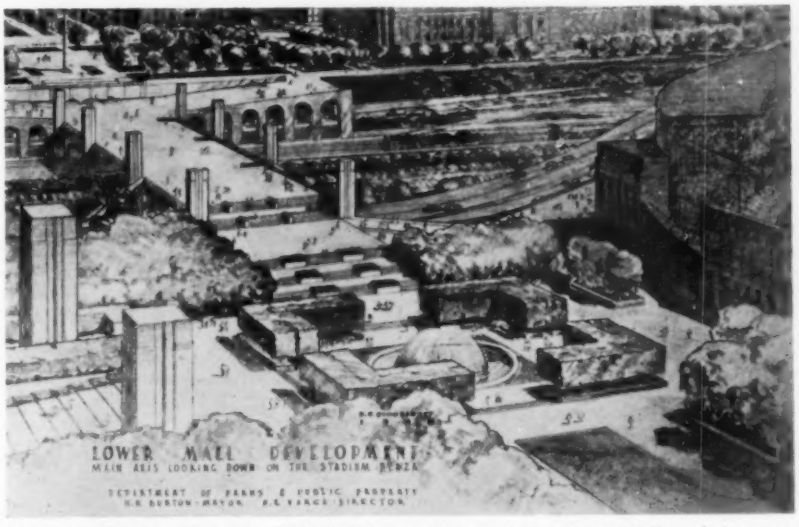
Plan for Lower Mall Coordinates Many Needs

CLEVELAND, OHIO. — Cleveland's Lower Mall, as shown in the upper illustration on this page, is now a barren waste stretching from the railroad tracks to the shores of Lake Erie between East Ninth and West Third Streets. Recently, this area has been the scene of much activity. The Lakefront Highway connection is in process of construction. The last remaining buildings from the Great Lakes Exposition are being removed.

As a result of an exhaustive two-year study, a plan for the Lower Mall has been completed by the Landscape Division of the Department of Parks and Public Property, and approved by the City Plan Commission.

This plan—of which two sketches are shown here—proposes a new park in the Lower Mall, similar in scale and dignified character to the Upper Mall, and extending to the very edge of Lake Erie. The logical approach to this park from the upper level is on the line of the axis of the Upper Mall. An approach that furnishes adequate

The Lower Mall as it is today: looking down from the Upper Mall, north, toward Lake Erie. The stadium is at the left



Sketch of plan for the Lower Mall, looking south toward the Upper Mall, and down on the Stadium Plaza. Railroad in the background, the Lakefront Highway in the center going under the pedestrian overpass; stadium to the right; sunken mall starting to the left

Sketch of plan for Lower Mall, looking south and down on the Lake Plaza. Lake Erie in foreground. Corner of stadium seen in extreme upper right corner

In the never ending campaign against dirt and litter, the A-W Patrol Sweeper handles street and gutter rubbish with speed and thoroughness, and solves the problem of leaf removal during October and November.

The Patrol Sweeper has won the approval of taxpayers on its record; low in first cost, inexpensive to operate and maintain, it is designed to do a thorough, safe, yet speedy job. It is effective in close quarters as well as on the widest streets, pays steady dividends in health protection, business stimulation and savings in sewer system maintenance.

In less than two years, this agile, dependable performer has won "sweeping victories" in scores of cities and towns throughout the world. Write for full details on its "RECORD" in communities with street cleaning problems like your own. THE AUSTIN-WESTERN ROAD MACHINERY CO., Aurora, Illinois.

Austin-Western

MOTOR GRADERS • BLADE GRADERS
ELEVATING GRADERS
HYDRAULIC SCRAPERS
CABLE SCRAPERS • MOTOR SWEEPERS
CRUSHING AND SCREENING PLANTS
ROLLERS • ROLL-A-PLANES
BITUMINOUS DISTRIBUTORS

When you write for that catalog, kindly mention THE AMERICAN CITY.

accommodation to the stadium crowds requires a pedestrian bridge 120 feet in width, on the line of the Upper Mall axis, going over the railroads and the Lakefront Highway, and reached from the Upper Mall by two ramps 55 feet wide.

The design of the park has been developed about the axes of the Mall and the stadium. The pedestrian bridge will terminate in a large decorative plaza—the stadium plaza—with a broad fountain basin as its central feature, and surrounded by massive screens of clipped trees. Within these shaded areas there will be adequate seating accommodations for large numbers of people. Beyond the plaza, the open character of the Mall will continue to the lakefront, ending in a broad terrace or plaza on the lake level.

To the east of the stadium plaza a wide sunken mall flanked on either side by shaded walks with benches and memorial garden areas will create a pleasing foreground to an imposing civic building proposed for the termination to the stadium axis at East Ninth Street. This is the one dominant position remaining for a civic building in the Lower Mall. It can house a number of educational museums: a science museum, a planetarium, and a city museum to house the growing municipal art collection. By lowering the level of the central park area it will be possible to attain height to such a building, without blocking the view of the lake from the Upper Mall. A seal pool will be located on the Mall side of this building, with a restaurant adjacent.

Parking areas to accommodate 2,300 cars, and entered from either East Ninth Street or West Third Street, will be provided on either side of the central park area of the Lower Mall. This includes the large area between the Lakefront Highway and the railroad tracks.

The plan proposes that a new bulkhead should be built 150 feet north of the present bulkhead. This will permit the building of a connecting street on the lakefront between East Ninth and West Third Streets, which will permit driving to and parking at the very edge of the lake, and will serve as a valuable by-pass, and an artery for traffic in times of stadium events.

The problem of taxi service to the stadium has been taken into full consideration. A broad pedestrian esplanade extending from the stadium to East Ninth Street on the north side of the proposed park, and leading directly to a taxi loading platform at the West Third Street end of the stadium, can, on the occasion of stadium events, be opened to the taxis and the northern half used for one-way circulation.

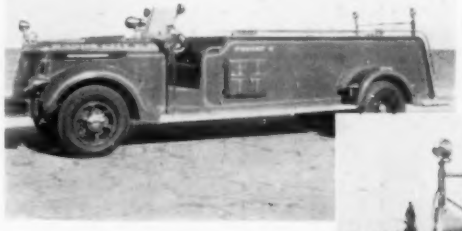
Through the adoption and gradual execution of this plan, Cleveland may achieve a well-organized and planned development.

JAMES M. LISTER,
Senior Landscape Architect,
Department of Parks and Public Property.

—Condensed from "Plan for the Lower Mall," by Mr. Lister, page 13 of the February, 1940, issue of *The Clevelander*.

New Fire Station

MASON CITY, IOWA.—The south side fire station and water-works addition of Mason City is located on a 1½-acre city-owned tract, approximately half of which is used by these improvements. The remaining area will be developed and used as a park for the south side.



At Left—
Modern 750-Gallon Triple Combination Pumper

At Right—
Housed in New Fire Station, at Mason City, Iowa

The fire station houses a triple-combination 750-gallon pumper built by the Peter Pirsch and Sons Co. on an International chassis. This is a 140-hp truck and has a Hale 2-stage series-parallel centrifugal pump. The equipment includes 500 feet of 3-inch hose, 1,600 feet of 2½-inch hose, and 600 feet of 1½-inch hose. Half of this will be on the apparatus and half in the hose tower ready for replacement needs.

The crew of this station is composed of a lieutenant, a driver, and a plugman on each shift. A shift is a 24-hour period; the firemen work, eat, and sleep at the station from one morning to the next.

Between the fire station and the water tank is a concrete slab 50 x 150 feet which, besides being used for drill ground for firemen, will be utilized as a public tennis court. The completion of this project affords the whole city a more complete distribution of fire protection.

The only part of this development which is not yet complete is the landscaping and beautification of grounds, soon to start. The water-works unit is complete in itself and pumps directly into the main.

H. T. BARCLAY,
City Manager.

City Manager Appointments

Grover M. Hardison, former Town Agent, has been appointed first Town Manager of Caribou, Maine.

C. C. McCarthy, Assistant Manager and City Engineer of Ames, Iowa, for the past thirteen years, has been appointed City Manager of Webster City, Iowa, effective April 1. Former Manager E. R. Compton is being retained as City Auditor.

Bernal Allen of New Portland has been appointed first Town Manager of Norridgewock, Maine.

G. Wilmot Carruthers, Secretary of Overseers of the Poor in Brewer, Maine, has been appointed first Town Manager of Lincoln, Maine.

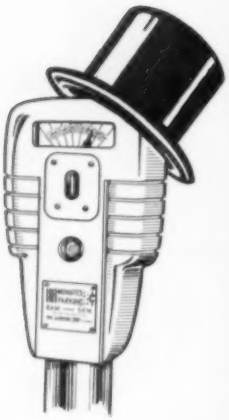
A. K. Thorndike, Town Agent of Pittsfield, Maine, has been appointed first Town Manager of Bridgeton, Maine.

Bill N. Taylor, City Manager of Longview, Texas, for the past twelve years, has been appointed City Manager of Port Arthur, Texas, effective April 15.

Ross W. Shoemaker, a resident of Westerville and associated with the Ohio State Archaeological and Historical Society, has been appointed City Manager of Westerville, Ohio, effective April 1. He succeeds Ross E. Windom, who recently received a promotion to Portsmouth, Ohio.

William E. Larrow, Mayor, has been appointed first Town Manager of Vergennes, Vt.

CLARENCE E. RIDLEY,
Executive Director, International City Managers' Association.



»» Yes, the "Thoroughbred" wears a silk hat since one of the world's most exclusive residential communities has installed KARPARK AUTOMATICS.

Village Hall, Bronxville, N. Y.

""BRONXVILLE

in Westchester County—installs

KARPARK METERS!

EXCLUSIVE Bronxville is used to having the best of everything. This well-managed village with its imposing real property value demands superior quality and service.

The Karpark Corporation is proud that when the time came for the Board of Trustees to choose parking meters for Bronxville — Karpark Automatics were selected.

Karpark Meters, built in compliance with rigid specifications prepared by the United States Bureau of Standards, have a proven record of superior performance over long periods of time.

Karpark can help solve your parking problems—inquiries for detailed information are welcomed.

All Karpark Meters are licensed under the patents of VEHICULAR PARKING, Ltd.

THE KARPARK CORPORATION
420 Lexington Avenue · New York, N. Y.

Traffic Control and Facilitation

Conducted by Publications Committee, Institute of Traffic Engineers, 60 John St., New York
Paul L. Green, Chairman; Louis A. Andriacchi, Frank A. Ashe, Charles G. Beckenbach, Wallace L. Braun, Nathan Chernlack, Carl E. Fritts, Alexander A. Hayton, Otto K. Jelinek, Harry C. Koch, Merwyn A. Kraft, Franklin M. Kreml, Tracy D. LeMay, Harry E. Stedman, Robert O. Swain

Is Pedestrian Safety Merely Conversation?

By HARRY E. STEDMAN
Safety Engineer, Des Moines, Iowa

THE pedestrian traffic accident problem is the most discussed angle of traffic safety. It includes people being run down by automobiles, or thoughtlessly walking into the path of a fast-moving vehicle.

Safety engineers know what to do, but are paralyzed by lack of that public interest which would approve expenditures for safety measures. Safety pays big dividends, but it costs money. Citizens persist in thinking, "It can't happen to me; it won't happen here," while traffic accidents continue to happen. Armor in the form of aggressive or at least awakened public protest, is needed to provide protection against a 2½-ton vehicle approaching at 44 feet a second.

The first essential is to know "how-where-when-why" the pedestrian accident happens. This is discovered from pedestrian accident spot maps and complete records. Then, whose accident is it? By this I mean, you would not treat an intersection that was adjacent to an elementary school the same as you would a loading zone for street cars in front of a Home for the Aged. They are different problems.

As two-thirds of the pedestrians killed in 1939 were violating regulations or were engaged in some unsafe act, obviously, then, it is necessary to have complete enough information as to what the pedestrian was doing, together with some of his history, such as to his condition and the time of the accident. This information will probably indicate that keeping automobiles and pedestrians apart is a problem for both motorist and pedestrian. The pedestrian must learn that the roadway between intersections belongs to the motorist; and, in turn, the motorist must learn that the intersection is the stamping ground of the pedestrian. How many times every day do we see the pedestrian challenging the motorist; hiding himself from the driver, then darting out between parked cars or walking from behind a trolley coach into an oncoming lane of traffic. The motorist is equally to blame when he permits his windshield to become fogged or dirty, or keeps a record of his trip by stickers on his windshield. *Vision plays an important role in traffic accident reduction*, and to be safe as pedestrians we must face facts. It is certain that a motorist cannot see a person in dark clothing on a poorly lighted street at night. Of course it is wise for the pedestrian to wear light-colored clothing—indeed, it is true that even a white handkerchief may save a life.

What caused the accident?

1. Was it lack of street lighting? Are the accidents occurring at night? Is the lighting well arranged? Does it put the pedestrian crossing the street in silhouette? Is there glare in the motorist's eyes from some flood system on private property?

2. Is the roadway extremely wide and is vehicular traffic heavy? Is a traffic island necessary? It has been found that at uncontrolled intersections a motorist becomes confused if he has to find his way through more than four lanes of moving traffic without the protection of a safety island. If islands are used, they should be well lighted. If low flashing lights are used, they should be amber in color, so that there will be no confusion with the red tail-light of a car. Reflector units should be provided.

Safety island on wide street; street cars replaced by trolley bus

3. If the problem is a matter of mass moving of pedestrians across a mid-block location, the possibility of an overpass is suggested. In building under- or over-passes, it is well to remember that you must make them convenient and easy for the pedestrian to use; otherwise, they become a hazard. Many underpasses have been condemned by the public and create police problems because approaches have been poorly designed and poorly lighted and are a hazard in inclement weather.

4. At schools and intersections where mass movement of pedestrian traffic is a problem with a minimum of cross vehicular traffic, semi-actuated pedestrian control units are an aid. We have a number of such intersections in Des Moines, and they are successful. If signals are used, they must be given the proper timing, for the pedestrian will not wait. As short a total traffic cycle as possible is urged.

5. In the use of traffic signals, a signal should be provided for the pedestrian. On wide streets a WALK

GOOD LIGHTING
Note the man seen in silhouette

POOR LIGHTING
Man cannot be seen 75 feet ahead of car

CLEVELAND BUYS DUAL AUTOMATICS!

CLEVELAND PRESS, March 29, 1940—Safety Director Eliot Ness today recommended to the Board of Control that the city enter into a contract with the Dual Parking Meter Co. of Oklahoma City for the installation of 2300 automatic meters on a rental-purchase plan.

Despite the difference of $52,785 in final price between the two types of meters, Mr. Ness said he was convinced the advantages of Dual Automatic Meter outweigh all other factors.

"It has been the national experience that automatic meters best serve their principal purpose of controlling traffic," he said. "Also, figures gathered from 85 cities by our traffic engineer (Vurnen L. Johnson) indicate that automatic meters take in more money than manual meters. This is the only 'yardstick' we have for comparison."

Mr. Ness said he learned automatic meters eliminate many enforcement problems invited by manual meters. Automatic meters begin operation immediately upon insertion of a coin. Manual meters require turning of a crank or handle after insertion of a coin.

* * * * *

THE *ORIGINAL* CARL MAGEE METER

DUAL PARKING METER CO.

Commerce Exchange Building Oklahoma City, Oklahoma

AERIAL BOMB AND TORPEDO

SPRINKLING Dolge Weed-Killer launches a two-way attack on weeds on your drives, walks, parking places, gutters, tennis courts, sand traps. Like an aerial bomb, it attacks the top growth. Like a torpedo, it penetrates the roots, and completes the kill.

Dolge Weed-Killer packs the power needed to kill such hardy growth as poison ivy, thistles, nettles, briars, wild morning glory, milkweed, burdock, crab grass, Johnson grass, nut sedge and many others.

Important: the raw chemicals which go into Dolge Weed-Killer are obtained from American sources. This product is dependable—not affected by conditions abroad.

Dolge Weed-Killer

The C. B. Dolge Co. Westport, Connecticut

STEWART FENCES *for all Public Property*

• City officials throughout the country are selecting Stewart Iron and Wire Fences to beautify and protect parks, playgrounds, buildings, institutions and other public property. They know Stewart Fences provide lifetime protection at the lowest per year cost.

Other Stewart Products for public property uses comprise: Settees, steel folding chairs, wire mesh partitions, trash receptacles, flag poles, bronze plaques, and many others. When writing for information, please mention products in which you are interested. Sales and erection offices in principal cities.

The Stewart Iron Works Co., Inc.
721 Stewart Block, Cincinnati, Ohio

Stewart IRON and WIRE FENCES

gnal is desirable, so timed that it will warn the pedestrian of insufficient

A pedestrian signal in use

time to cross. The WALK and WAIT indications are the most desirable. In our city we are utilizing the flashing green at the end of the period as a warning indication to pedestrians that they do not have time to cross the street. It has been very satisfactory and saves the expense of another traffic face.

Crosswalk paving markings

6. Crosswalks and paving markings are a very definite help. We have 150 school intersection crosswalks marked with white cement. They definitely aid as a warning to the motorist. We sometimes carry the center line back from these crosswalks 100 feet or so, and then curl or wave it, thus calling the line to the attention of the motorist.

7. At the majority of our school crossings in residential areas we use a rotating school stop sign which is turned to face toward traffic three hours each school day at the times that the students are going to and from school. We require all traffic to stop at these locations.

8. Signs as pedestrian aids have been helpful at a number of intersections in our city. In some places we use metal signs with the message, "Watch Traffic Signal"; in other places we paint the message on the sidewalk.

A semi-actuated school signal with white cement marked crosswalk

9. At many intersections it may be necessary to prohibit vehicular turning movements, because of heavy pedestrian traffic. It will be found that eliminating turning movements by police control at intersections with heavy pedestrian traffic will aid not only in reducing accidents, but in the moving of traffic.

Education and enforcement are essential. Signals must have the respect and obedience of the public. In matters of education of pedestrians we have used cards in street cars, and are now trying the plan of taking the lesson directly to the intersection where the accident occurred. At the twenty most hazardous pedestrian accident corners in the city we have posters covering accident problems. At some having specific problems, we have made a placard to fit the type of accident happening there. This of course offers an opportunity to bring pedestrian education to the place where the trouble is occurring.

We must remember when we get out of our car *we are pedestrians*, and, as such, we cannot expect the motorist to do the impossible as a *driver*.

Let's stop playing hide-and-seek with this pedestrian problem. Let's get the public to insist that we solve it at its price.

School stop (on)

School stop (off)

What Do Traffic Signals Mean?

ON MARCH 25 the Chairman of the Concord, N. H., Police Commission was fined $3 for passing a traffic signal while both green and amber lights were showing. The Concord ordinance says that drivers may go only on green signal. The sequence of the Concord signals is green, then green and amber, then red. W. J. Drew, of Concord, writes, "Can't see any sense in having both green and amber showing at the same time. Green means go always."

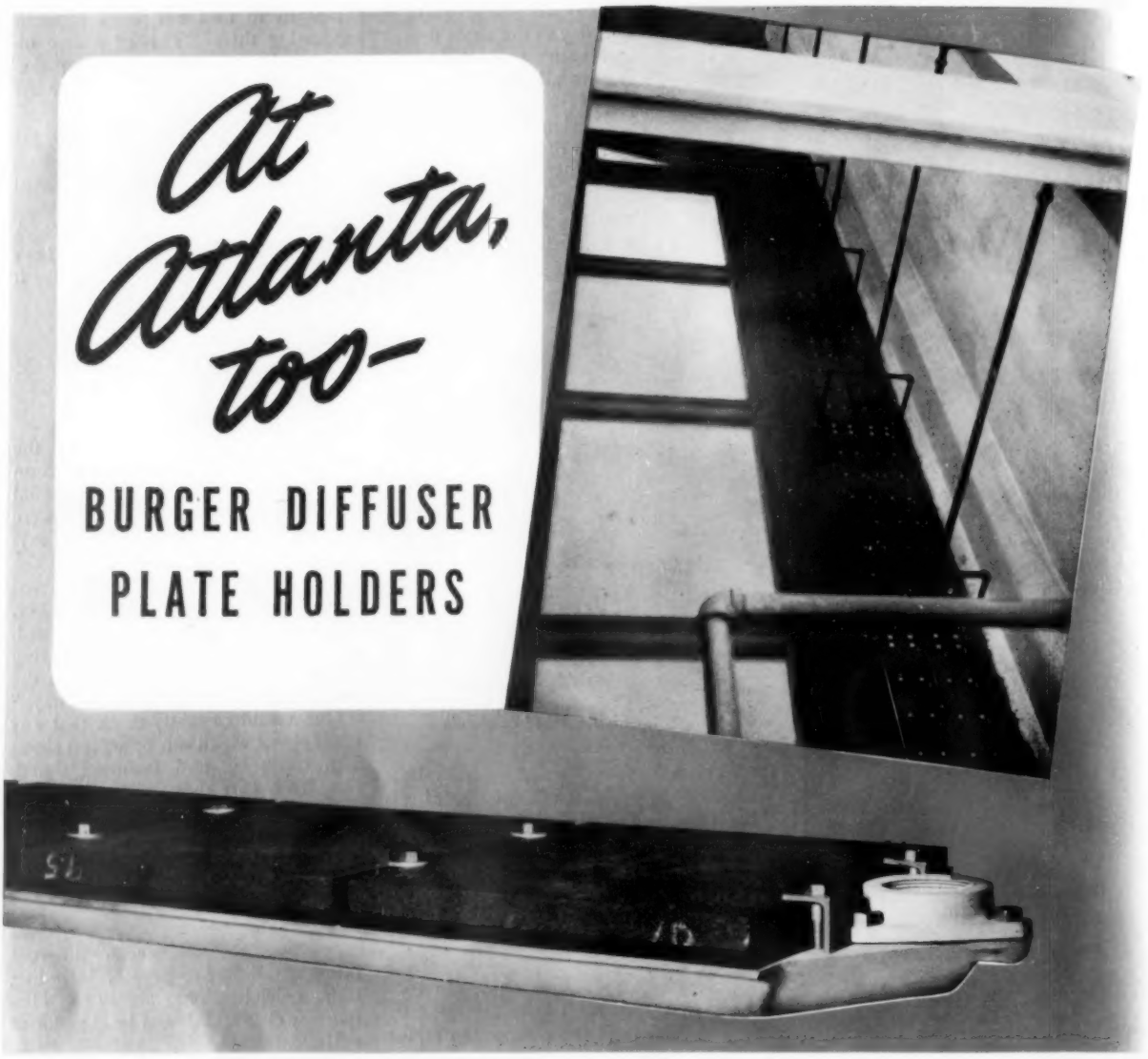
One would certainly think that any traffic signal which can be argued about is a confusing and incorrect signal. New York City uses red for stop and green for go. There can be no argument about those two universally understood colors. New Jersey uses green, amber, red, and there should not be any question about the meanings of those three colors. All combinations of colors, however, mean different things to different people, including traffic officials. They are in the idiosyncrasy class and should be abandoned entirely.

Opinions on this subject and the specific case at Concord, N. H., have kindly been furnished by the authorities below:

ELIZABETH, N. J.—The proper use of the intermediate interval, following the green signal indication, has been confused in a number of jurisdictions by combining the usual amber indication with green or red to provide various meanings and shades of meanings known only to local users, and not always to all of them, as shown by the Concord experience.

Such special color combinations do harm in that they confuse proper and standard use of red and green for "Stop" and "Go." They are both confusing and dangerous—where they can be mistaken by strangers for the usual clearance interval, whereas locally they signify something else, or vice versa.

The intermediate interval is quite properly intended to provide clearance



Sorry! No action in this aeration tank the day this photograph was taken at the Atlanta, Georgia, sewage treatment plant. But you should see it normally; every plate at work, each receiving its full quota of air.

Burger diffuser plate holders help the sewage treatment plant maintain its high efficiency. They are made of Alcoa Aluminum, so are able to withstand the corrosive attack of the sewage. There's no rusting to cause clogging of the plates.

The lightweight of Aluminum, coupled with the convenience of the Burger design, makes the task of maintaining the aeration system an easier one. Holders carrying a number of diffuser plates are handled as a unit. Plates are removed quickly, without danger of breaking them; they are quickly replaced and made water- and air-tight against long-lived rubber gaskets.

It will pay you to investigate the money-saving possibilities of this holder and of the use of Aluminum Alloys elsewhere in sewage treatment processes. ALUMINUM COMPANY OF AMERICA, 2172 Gulf Building, Pittsburgh, Pennsylvania.

ALCOA ALUMINUM

time for pedestrians, caught midway between curbs, and for vehicles in, or outside of, but entering or closely approaching, an intersection from "Go" directions. The best and major use of this interval is to permit these pedestrians and drivers to clear the intersection and to attain a place of safety on the far side before cross movements are started.

In most parts of the United States the standard or accepted use of the intermediate interval conforms to the clearance analysis above. In some jurisdictions, however, the intermediate or amber interval is treated by enforcement officers, not as a clearance interval, but as a prohibition of movement requiring an instantaneous stop, and on this basis arrests and fines are regularly made for violations. This amounts to an abuse of this entirely reasonable, necessary and proper interval.

If the Stop and Go signal is to survive as an effective instrument, it must be used as intended, and so enforced; the intermediate interval cannot safely be eliminated or its use abused. If a driver from one state understands that the intermediate interval means an instant stop, and a driver from another understands and uses it as it is normally intended, skids and rear-end collisions are an inevitable consequence.

Traffic signaling, if it is to continue useful, must be kept clear of the confusions so prevalent in enforcement of many other traffic laws and regulations that a driver often does not know when the law is the law. Drivers must not be interfered with by law-enforcing officers in their proper use of the intermediate interval in Stop and Go signaling lest the value of this safeguard be lost.

GUY KELCEY and IRVING MACK,
Signal Service Corporation.
—From *Traffic Engineering* for April, 1940.

Many municipalities have adopted the practice of using a yellow-red signal showing on all traffic signal faces to permit pedestrians to cross.

In our opinion, red is a clean-cut stop signal, and if additional functions are needed in which it is required that the vehicles be brought to a stop, the red should be used in combination with the yellow.

PAUL P. HORNI,
Vice-President, Horni Signal Mfg. Corporation.

Economical Use of Streets by Public Carriers

By CHARLES GORDON
Managing Director, American Transit Association

AMERICAN cities have grown in area and population faster than the transportation facilities. In addition, the automobile has stimulated travel habits and jammed the entire circulatory system and thus offset one of the major purposes of the existence of cities. Then, inaccessibility due to traffic congestion produces unstable property values and a tendency for business areas to shift location.

Owners of centrally located property are uneasy as to the future of their investments because of the development of more accessible rival business centers. The principal business district tends to creep in the direction from which comes the greatest number of people. There is also a marked tendency for sub-business centers to develop and to grow rapidly—in some instances so rapidly as to rival the old business center. These sub-centers develop at points where major travel arteries cross each other or where there is otherwise a natural reason for population to concentrate because of accessibility.

Streets Are Principal Arteries

In a few of our very largest cities, rapid-transit lines in the form of subways and elevated lines have been built. But in most of our cities the principal arteries of urban travel are limited to their street systems. In these arteries two general forms of vehicles are operated: public vehicles consisting of street cars, trolley coaches, buses and taxicabs; and privately owned automobiles.

The economic and social life of cities is not dependent upon the movement of vehicles; it is the people in these vehicles that we are primarily concerned with. The vehicles are merely a means to an end. We must measure the capacity of our typical street in terms of the number of *people* who are served by automobiles, coaches and street cars.

A 60-foot street used to its capacity exclusively by automobiles, moves 3,700 people per hour. The same street, used by automobiles and buses in combination, wil move 2,130 persons in automobiles, 7,200 seated bus passengers, and 1,800 standing bus passengers, or a total of 11,130 passengers per hour. Using this street for automobiles and street cars, it will move 2,130 people in the autos, 9,000 seated passengers in street cars and 4,500 standing, or a total of 15,630 people per hour.

Alternative methods of serving our cities of the future are the subway and the elevated highway. A four-track subway structure comprising two local and two express tracks costs 6 to 18 million dollars a mile; but one local and one express track of this type has a capacity of 100,000 passengers per hour in one direction. It requires 20 four-lane elevated highways to move 100,000 people per hour in automobiles.

Vastness of Parking Problem

But there is still another factor to be considered. Assume that we can build highways in our cities so that all workers and shoppers can come to town in their own automobiles. What would they do with the cars?

Central business buildings of modern type provide an average floor area per worker of about 150 square feet. Corresponding studies of the space needed for the storage of automobiles in the most modern types of ramp or elevator garages indicate a floor area requirement averaging 240 square feet per car.

Crediting each vehicle with the average loading in city traffic of 1.75 persons, gives a storage space requirement of 140 square feet of floor area per person. Thus for each person transported, the space required to store automobiles in the most modern types of garages approximately equals the space occupied by the same number of workers in central area business buildings. This comparison makes no allowance for the storage of cars by those who come into these districts to do business as shoppers and otherwise. It takes into consideration only the space requirements of those who work in the district.

Hope in Mass Vehicles

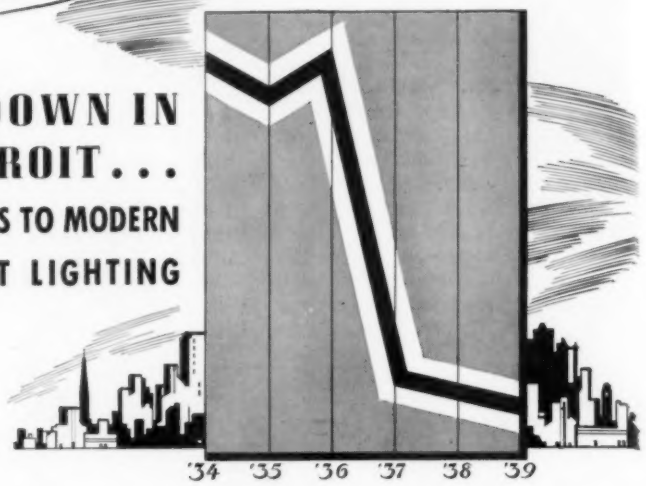
The economic advantage of collective transportation justifies the conclusion that through the development of such facilities, and through their greater utilization, a community may most economically improve traffic.

Compared to the cost to a community of rebuilding itself for automobile travel, the economic advantage is all in favor of whatever public expenditures may be necessary to achieve a really acceptable standard of service on public carriers.

THE DEATH CURVE

IS DOWN IN DETROIT...

THANKS TO MODERN STREET LIGHTING



Average ratio of night to day fatalities:
Before Modernization 6.9 to 1
After Modernization 1.4 to 1

That's Detroit's answer to the skeptics who minimize the safety value of modern street lighting. It's a fine tribute to a great city that wasn't content just to talk safety but rolled up its sleeves and corrected the conditions that were the source of the trouble.

Detroit is not fighting a lone battle, however. Scores of other cities from coast to coast are combating "Death After Dark" successfully with modern street lighting. In almost every instance you will find Union Metal a "standard" specification. Why? Because these modern steel standards are designed to provide the increased mounting heights so essential to safety lighting. They are rugged, too, assuring long life with a minimum of maintenance. And, in addition to these practical features, Union Metal standards lend beauty and dignity to the completed installation.

The Union Metal line of steel standards offers a type and size to meet every community lighting problem—and pocketbook. Write today for complete information.

THE UNION METAL MANUFACTURING CO.
CANTON, OHIO

Outdoor Lighting

Streets—Highways—Floodlighting

Records of Experience

By C. A. WALLS
Commissioner of Public Works,
Oak Park, Ill.

THE present street-lighting system of the village of Oak Park was constructed by special assessment in 1927 at a total cost of $1,027,597. There are 3,667 concrete-post lighting units on this system. On residence streets the posts are 13 feet high, and on business streets 15 feet high, except the cast iron posts on Madison Street. On residence streets the posts are about 150 feet apart, staggered; on boulevards, 150 feet apart, opposite; on business streets, about 115 feet apart, opposite. Posts are set on concrete foundations.

The posts are equipped with a bronze lantern lighting unit with eight panels. On residence streets they are equipped with 250-cp lamps; on boulevards and through streets, 400-cp; on business streets, 600-cp. On residence streets, through streets and boulevards there are group transformers; on business streets, individual transformers. Energy is supplied through armored parkway cable laid immediately back of the curbing about 18 inches below grade. There are 125 94-watt lamps in the subway structures.

Energy is supplied by the Public service Co. of Northern Illinois at the street-lighting substation. Energy is metered and is paid for under a five-year contract, which expires September 17, 1940. This contract is known as Rate "P," Municipal Pumping and Street Lighting Service of the Public Service Co.

The street-lighting system includes illuminated Stop signs and Stop and Go signals. Illuminated Stop signs are connected up with the street-lighting circuits, and energy cost is included in lighting-system expense. Stop and Go signals are connected up to domestic circuits of the Public Service Co., and the energy cost per intersection is about $8 per month.

COMPLETE EXPENDITURES FOR STREET LIGHTING

	1928 1929 1930	1931 1932 1933	1934 1935 1936	1937	1938	1939
Labor	29,100	33,972	31,184	10,729	10,532	10,380
Energy (Street lights)	121,947	112,773	106,027	35,479	34,593	33,661
Energy (Stop and Go)	5,720	205				
Lamp renewal	20,765	25,472	18,562	4,167	5,000	4,978
Maintenance supplies	24,416	9,608	12,122	2,566	3,232	3,748
Tools and miscellaneous equipment	372					383
Office supplies	242		16			
Auto equipment and main	3,240	2,908	3,392	1,243	267	
Miscellaneous	194	83	14	139	204	373
Engineering services	280					
Contract work		788				
Superintendence			1,166			
2 new trucks					1,346	
S. and G. light controls					599	
Total	206,280	185,813	172,487	54,325	55,777	53,525

* Expenditures in even dollars; cents omitted.

The street-lighting system has continued to function very satisfactorily throughout the year. There has been practically no repair work on cable, etc., outside of general maintenance. The system is operated under the direction of the Commissioner of Public Works, and is maintained by three electricians. Two of the electricians maintain the lights, cables and station equipment, and the third man spends most of his time cleaning lantern units.

In 1939, 23 posts were knocked down or damaged. Of this number, damages were collected from 18 of those responsible for the damage. The total cost for repairs to damaged posts was $931. During the year $718 was collected from those responsible for damage, of which $135 was for repairs made in 1938.

There were 17 cases of trouble in connection with the underground cable and conduit, where cable was cut or damaged during excavation for underground improvements such as sewers, water services, street widening, and tree removal. The cost of these repairs was $668. In cases where this work was not considered general maintenance, the persons responsible for damage were billed, and $23 was collected for such repairs.

Street lamps in residential districts were cleaned twice, and those in the business districts were cleaned three times.

Lighting units now in service:

CP	
68	100 — A.N.
2,614	250 — A.N.
188	250 — M.N.
430	400 — A.N.
335	400 — M.N.
151	600 — A.N.
140	600 — M.N.
125	94-watt subway lights — A.N.
4,051	

A.N.—All night burning.
M.N.—Midnight burning.

They are mounted as follows:

3,667	on concrete posts
183	on cast iron posts
74	brackets on trolley poles
2	on lantern brackets
125	subway reflector brackets
4,051	

In connection with the record of the number of lights, lamp renewals, broken glass panels, cleaning of panels and post damage, a complete account of individual posts is kept by means of a system of visible records. All posts are numbered, giving the post number, sub-circuit number, manhole number and main circuit number by which all work is reported by the electricians. This numbering also expedites the work on the lighting system, since it identifies all equipment from the switch at the substation to the lamp in the post.

Record has been kept of broken lamp panels, by school districts, showing replacements as follows:

3,804 in 1930	2,171 in 1933	3,692 in 1936
3,131 in 1931	1,817 in 1934	3,399 in 1937
2,522 in 1932	2,773 in 1935	4,587 in 1938
		4,879 in 1939

Only $206 Per Capita for Greensburg

THE FAMOUS Greensburg, Pa., street lighting described here in December, 1938, costs $35,000 per year for 43 1,000-cp lamps, 506 500-cp and 453 250-cp. This amounts to $2.06 per capita.

SAFER LIGHTING...

with FORM 79

10 "EXTRA VALUE" FEATURES OF NOVALUX FORM 79

1. Stepped (lamp saving) reflector.
2. Spun sealed globe holder.
3. Reconditioned reflector exchange.
4. Durable Glyptal finish.
5. Machined joint between hood and reflector.
6. Die-cast aluminum hood.
7. Heavier pressed globe with drip-proof edge.
8. Larger ornamental globe (optional).
9. Available for Type H mercury lamps.
10. Choice of 3 globe holders.

Modern General Electric Street Lighting Units . . . *via* GraybaR

When you put your street lighting problems up to GRAYBAR, you get a double assurance of plus value:

First, you get the benefits of such outstanding lighting units as the General Electric Form 79 Luminaire – the unit that "delivers better than 80% more useful light at a first cost of 35% less than older designs." Other modern G.E. units, too, are available to meet any combination.

Second, GRAYBAR'S experienced staff of specialists on municipal lighting and public safety problems stands ready with *service to you* as its primary responsibility. In analyzing your needs and specifying lighting units and accessory equipment, it assures a broad-gaged point-of-view and reflects a more intimate knowledge of local conditions. And because of GRAYBAR'S *all-inclusive* service on public safety equipment – traffic signals, fire alarm systems, police radio, and the like – GRAYBAR specialists can give experienced aid in a coordinated public safety improvement program of which safe lighting is a part.

Why not get in touch with your local GRAYBAR branch for the complete story on modern ways to safer street lighting? Or, write direct to GRAYBAR for Bulletin which describes the Form 79 unit in detail. Graybar Electric Company, Executive Offices: Graybar Building, New York.

Highway Traffic Safety Lighting in Alabama

By Stuart R. Williams
Manager, Street Lighting Department, Holophane Co., Inc., Newark, Ohio

THE state of Alabama has under way a complete program for safe highway construction and improvement. Reports of the Alabama Highway Patrol for 1938 show that 58.5 per cent of all accidents occur at night, when traffic is 25 per cent of total traffic.

Under C. J. Sherlock, State Highway Director, an experimental lighting system has been installed on the Attalla-Gadsden highway. This is an important local traffic thoroughfare which also carries heavy through traffic as a connecting link of U. S. Highways 411 and 241. As part of the program, the State Highway Patrol will keep complete records of all accidents that occur on the highway.

The experimental area covers a stretch of 3.6 miles. Of this, 2.25 miles is excellently lighted. The remaining 1.35 miles is left unlighted for purposes of comparison. The roadway is dark-colored macadam, 40 feet wide, with wide berm areas on each side. Adequate pavement markings, safety warning signs and other safeguards are employed in addition to the highway lighting.

The lighting system is a staggered arrangement of pendent luminaires spaced 150 feet apart, center-line measurement. The mounting height to light center is 25 feet. Six thousand lumen series lamps are used. Each luminaire is suspended from a mast arm which extends over the outside lane.

On 2½ miles of dark macadam Gadsden-Attalla, Ala., highway; 6,000-lumen lamps mounted 25 feet and spaced 150 feet apart staggered, and 3 feet in from curb; light placed on roadway by Holophane refractors

The luminaires are of the reflector-refractor type. A Holophane prismatic refractor directs most of the light outward into the roadway and spreads it up and down. Excellent visibility over a distance of more than 1,000 feet is thus provided.

The system was installed by the Alabama Power Co., and operation and maintenance will be paid for by the Alabama State Highway Department. This is the first step in what is expected to be a complete traffic safety lighting program.

Street Lighting Costs a Dollar Per Capita

The City of Bozeman, Mont., has approximately 25 miles of lighted streets, of which 2.1 miles are lighted by ornamental pole lights, and the rest by suspension lights placed at every second street intersection. Ornamental lights were installed by the city and owners of property abutting such lighted streets. All other lights are owned by the Montana Power Co., which maintains all street lights.

Below is a schedule of the monthly rate for current and maintenance to operate the 194 lighting units owned by the city and the 145 units owned by the power company.

M. E. Henderson,
City Manager, Bozeman, Mont.

Owned by City

No. Lights	Lumens	Type	Monthly Charge Current and Maintenance	TOTAL
28	4,000	Post	$1.64	$ 45.92
52	6,000	Post	2.26	117.52
4	10,000	Post	3.30	13.20
107	2,500	Post	1.26	134.82
2		Special	1.25	2.50
1		Special	.75	.75
		Owned by Montana Power Co.		
120	6,000	Suspension	3.57	428.40
25	1,000	Alley lights	.88	22.00
			Total monthly cost	$765.11

Expects to Install a Million Lumens

The Street Lighting System of the city of Pasadena, Calif., consisted of 5,458 ornamental units and 3,756 other lighting units in 1934, and 5,480 ornamental and 3,937 other units in 1939.

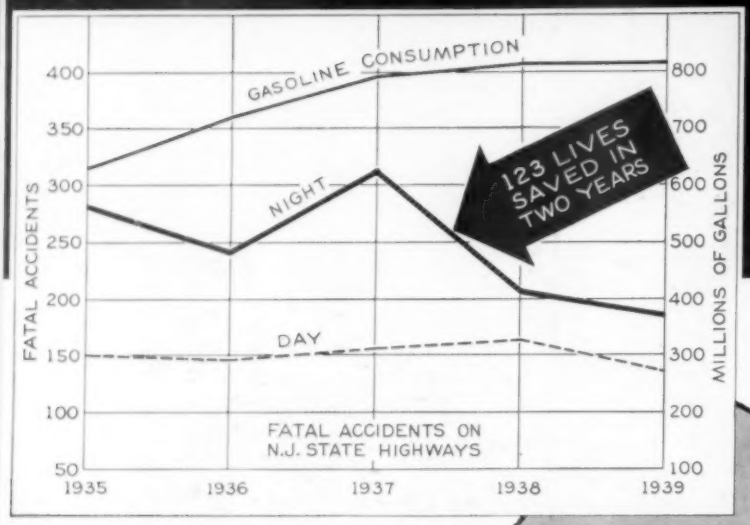
In the ornamental system the 98 five-light clusters were reduced to 55 of this type. The principal addition consisted of 74 units, each equipped with two 4,000-lumen lamps. In the residential system, the 201 additions comprised 39 800-lumen, 131 1,000-lumen, 13 2,500-lumen, 1 4,000-lumen incandescent, and 22 sodium-vapor lamps; against 5 6,000-lumen units removed.

During 1940-41 it is expected that 100 1,000-lumen, 100 6,000-lumen, and 50 10,000-lumen lamps will be installed.

The street lighting rate of the municipal plant is 1 cent per kwh.

New Jersey Proves

that Highway Lighting SAVES LIVES



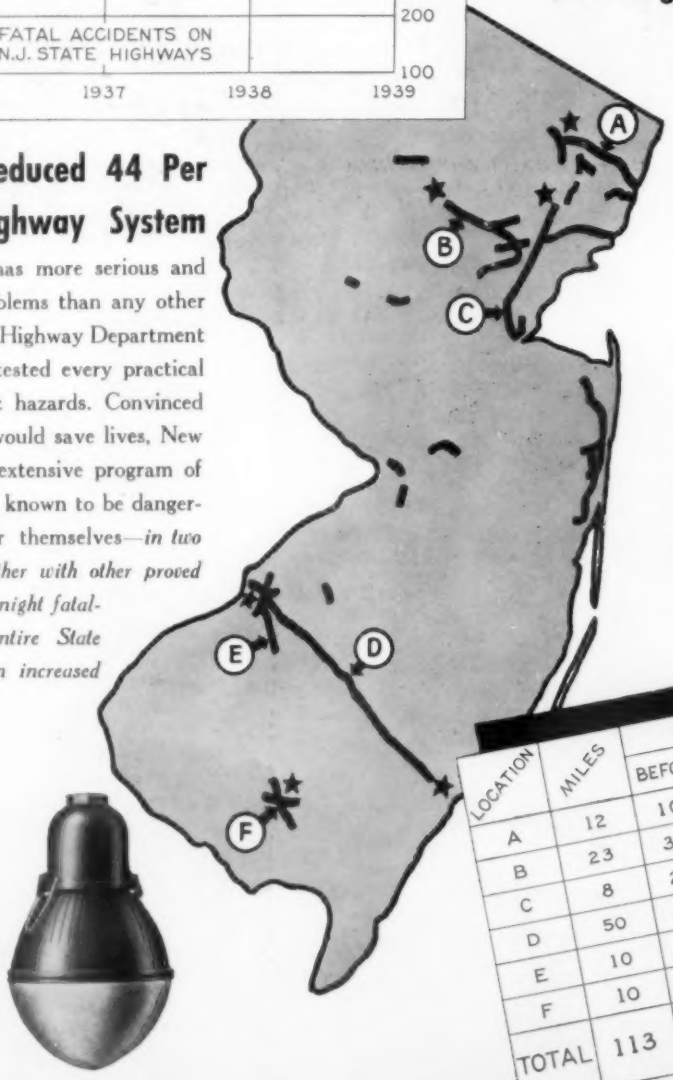
Night Fatalities Drop 76 Per Cent After Lighting 113 Miles of Highway

NEW JERSEY knows what the lighting of night-accident zones can do. On 113 miles of highway,* night accidents were reduced 38 per cent. On the same highway, night *fatalities* were reduced 76 per cent—*42 lives were saved* because the hazards caused by lack of visibility were removed. The State has installed more than 11,500 luminaires, 9650 in the last two years, because it is convinced that adequate highway lighting is a most essential and economical method of quickly and surely reducing the number of darkness accidents. General Electric, Schenectady, N. Y.

* New Jersey has lighted State highway night-accident zones in 177 municipalities and at 940 county-state road intersections, but accident statistics are given here for only 113 miles of continuous-lighted highway sections connecting municipalities.

Night Fatalities Reduced 44 Per Cent on State Highway System

BECAUSE New Jersey has more serious and complicated traffic problems than any other state in the Union, its State Highway Department for years has studied and tested every practical method for reducing traffic hazards. Convinced that traffic-safety lighting would save lives, New Jersey, in 1937, began an extensive program of lighting sections of highway known to be dangerous. The results speak for themselves—*in two years, highway lighting together with other proved safety measures has reduced night fatalities 44 per cent on the entire State highway system even with an increased traffic volume.*



LOCATION	MILES	ACCIDENTS			FATALITIES		
		BEFORE	AFTER	PER CENT DECREASE	BEFORE	AFTER	PER CENT DECREASE
A	12	101	74	26.7	5	2	60.0
B	23	301	208	32.2	16	2	87.5
C	8	229	125	45.4	10	3	70.0
D	50	188	84	56.5	16	3	81.[illegible]
E	10	35	24	31.4	5	3	40.[illegible]
F	10	18	24		3	0	3[illegible]
TOTAL	113	872	539	38.2	55	13	7[illegible]

Map and Data Courtesy New Jersey State Highway

New Jersey Highways Are Lighted with Luminaires Made Possible Through G-E Research

The G-E Form 79 luminaire is used exclusively on the 52-mile White Horse Pike—the world's longest, continuously lighted highway. Ask for a copy of our new Form 79 bulletin (GEA-2276C) for further information about this popular luminaire.

GENERAL ELECTRIC

454-1

Left—Before improved street lighting in Jackson, Mich.

Below—After modern units with large lamps were installed—10,000-lumen in the business district shown, and 6,000-lumen elsewhere

General Relighting in Jackson, Mich.

A NEW SCIENTIFICALLY DESIGNED street-lighting system along Michigan Avenue, the main trunk highway through Jackson, provides better light and better sight for merchants as well as motorists, and also for pedestrians and shoppers. The new system is the result of cooperation between city officials and the Michigan State Highway Department.

Pendent luminaires mounted 22 feet high on ornamental brackets from slender and decorative fluted rolled steel standards are used throughout the three miles of street. In the business section the standards are spaced 92 feet apart and opposite. The lamps are 10,000-lumen incandescents. Outside the business district, 6,000-lumen lamps are mounted the same as in the business district, and at each through intersection there are two at opposite corners. At all other intersecting streets they are located at the end of the intersecting street. Between blocks the standards are staggered, spaced approximately 200 feet apart. All lamps except those in the business district are equipped with refractor bowls, giving a concentrated illumination on the street without shining into the adjacent residences.

The total number of standards and luminaires erected is 184, 86 of which are in the residential section, using refractors. The new type of pendent luminaire lighting is still being extended.

CHARLES P. ISMON,
City Manager, Jackson, Mich.

Fort Collins' Total Costs

LIGHTING 65 MILES of Fort Collins, Colo., streets with municipal-plant current costs $14,260 per year plus capital charges of $16,307, or $2.66 per capita, or 8.9 cents per foot.

More Light Wanted on Buffalo Streets

NIGHT TRAFFIC FATALITIES within Buffalo, N. Y., city limits accounted for 345, or 61.5 per cent, of the total fatal street accidents during the five-year period 1934-38, reports the Buffalo Junior Chamber of Commerce. The survey showed that only three cars were on the streets after dark for every ten in the daytime.

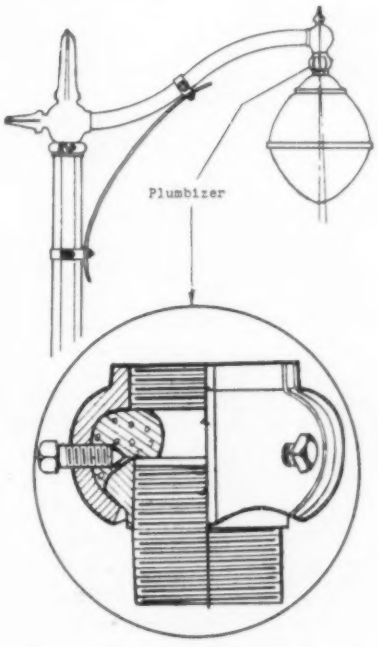
Of these night fatalities, 220 occurred on 12 heavily traveled arteries, or on 1 per cent of the city's 1,661 streets. Main Street, the longest of this heavily traveled group, produced 31 of the fatalities and only 3 of these occurred in the best-lighted section.

These are the figures for all street fatalities:

	Total	Night	Day
1934	119	75	44
1935	110	58	52
1936	110	73	37
1937	131	82	49
1938	91	57	34
	561	345	216

The Safety Committee of the Junior Chamber recommends that lighting surveys be conducted to determine measures for preventing deaths on Buffalo streets at night, and that special attention be given to the dozen locations where two-thirds of the accidents have occurred.

Holds Luminaire Alignment

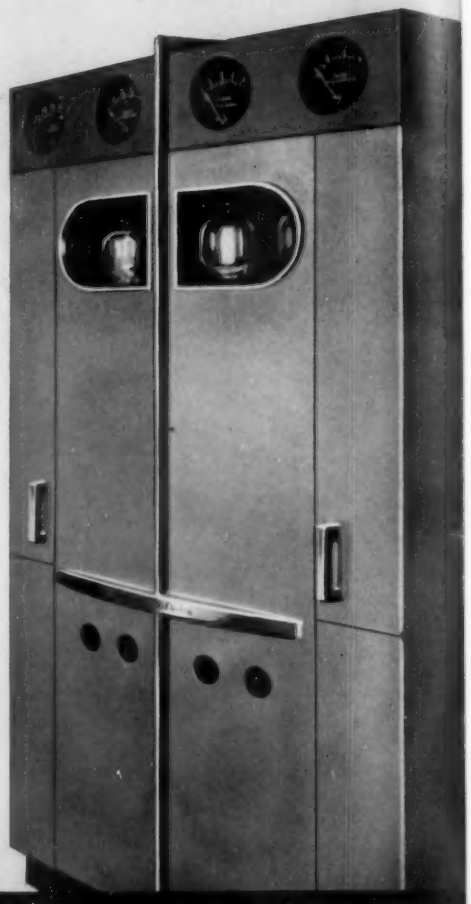


This essential little device is the new "Plumbizer" that straightens luminaires which sometimes get cocked out of line. It is now standard equipment with all Union Metal poles and can be fitted to existing installations.

New Hampshire State Police get quick action with Radio

by

Western Electric



Single 1KW Transmitter covers 8000 square mile area!

Western Electric Police Radio is giving added protection to 45,000,000 people.

Now New Hampshire joins the ranks of states equipped with Western Electric Police Radio—and finds big benefits *in a few weeks.*

Alarms received from the 7-State Teletype network—the local Concord, Manchester, Nashua network—and directly by telephone—are broadcast immediately to 47 patrol cars throughout the state. Emergencies at remote points are thus covered in a matter of *minutes*—where formerly it often required *hours!*

13 counties—cooperating for greater law-enforcement efficiency—have already installed receivers.

Transmitter Has Unusual Features

New Hampshire's new Western Electric 1KW transmitter has many features usually found only in the largest and finest broadcasting stations. For example: the Doherty Circuit greatly increases all 'round operating efficiency, while improved grid bias modulation reduces distortion and cuts operating costs.

What Is Your Radio Problem?

No matter how large or how small your area may be, there's Western Electric Police Radio equipment for headquarters and patrol cars to help you cover it faster, more efficiently.

Distributed by GraybaR

For information on one or two-way equipment, write to Graybar Electric Company, Graybar Building, New York, N. Y.

Improving Municipal Administration

Current Items from the Public Administration Clearing House

Tax Delinquency at New Low for 1939

While Tax Delinquencies for 150 of the major cities of the country declined to a "new low" average of 9.2 per cent at the end of 1939, at least 24 cities showed delinquencies of less than 5 per cent, the Municipal Finance Officers' Association notes from a report by Frederick L. Bird.

The average percentage of taxes still to be collected of the 1939 levy in these 24 cities at the close of 1939 was only 4.7 per cent. Ten of the 24 cities with the best tax collection records are in California, 3 in New York and 3 in Connecticut, with the others scattered elsewhere in the country. Fresno and San Jose stood at the top of the list, each with 1 per cent outstanding in current taxes, while San Francisco had 1.3 per cent, according to the report.

The 24 cities with notably low delinquency records were the following:

Fresno, Calif.	1.0
San Jose, Calif.	1.0
San Francisco, Calif.	1.3
Berkeley, Calif.	1.6
Oakland, Calif.	2.1
Mobile, Ala.	2.2
Sacramento, Calif.	2.3
Cedar Rapids, Iowa	2.7
Bridgeport, Conn.	2.9
Buffalo, N. Y.	3.2
Long Beach, Calif.	3.2
Denver, Colo.	3.3
Peoria, Ill.	3.4
San Diego, Calif.	3.5
Davenport, Iowa	3.7
Birmingham, Ala.	3.8
Niagara Falls, N. Y.	3.8
Schenectady, N. Y.	3.9
Hartford, Conn.	4.0
Cincinnati, Ohio	4.2
Pasadena, Calif.	4.2
Los Angeles, Calif.	4.4
Fort Wayne, Ind.	4.7
Waterbury, Conn.	4.7

A total of 119 of the 150 cities in the report showed a lower percentage of tax delinquency for 1939 than for 1938. The 1939 delinquency record of 9.2 per cent was 1.5 per cent lower than that of 1938, and indicated a general decline compared with 26.3 per cent in 1933, and 10.1 per cent in 1930.

Most of the 31 cities which did not improve their tax collection records last year fell short only by a fraction, according to the report. Eighty-six of the 150 cities reduced their year-end delinquency below the level of 1930.

Ten of the 21 cities with the lowest tax delinquency records for 1939 have the council-manager form of government, the National Municipal League reports on the basis of the report. While the average tax delinquency for 150 chief cities was 9.2 at the end of last year, the average percentage of taxes still to be collected in these 10 manager cities was only 2.9 per cent. The cities are San Jose, Berkeley, Oakland, Sacramento, Long Beach, and San Diego, Calif.; Niagara Falls and Schenectady, N. Y.; Cincinnati, Ohio; and Pasadena, Calif.

According to the Municipal Finance Officers' Association, "Tax delinquency records are considered the best barometer of municipal fiscal ability."

Strict Smoke Ordinance Adopted in St. Louis

A New Smoke Prevention Ordinance in St. Louis which makes mandatory the use of smokeless fuels or mechanical firing equipment that will burn fuel without smoke is one of the most drastic attacks made by any city on the smoke problem to date,* the American Municipal Association reports. The ordinance contains a provision, hitherto not found in municipal smoke legislation, which empowers the city, after declaring an emergency, to purchase smokeless fuel in wholesale lots and distribute it to consumers if an adequate supply cannot be secured through commercial coal dealers.

St. Louis, like 80 or more cities in the large-population class, has had a smoke-prevention ordinance for a number of years. Most of these municipal ordinances specify varying densities and amounts of smoke emission allowable from house chimneys, industrial smokestacks, and boats and locomotives. Smoke density is usually measured by a chart which enables grading by the shade of smoke. Most of the cities permit smoke-emission periods of six minutes an hour, and the ordinances are in the nature of abatement rather than elimination measures.

The new smoke ordinance in St. Louis requires smokeless fuel in hand-fired and surface-burning furnaces. Such fuel is defined as containing less than 23 per cent volatile matter. Sale of any fuel containing more than 12 per cent ash or 2 per cent sulphur on a dry basis is prohibited in the city. Smoke-emission time for locomotives is shortened from six minutes to one continuous minute in any hour.

A special committee on smoke elimination worked for a year before presenting the report that resulted in the St. Louis smoke ordinance. In requiring smokeless fuel, the committee expressed the hope that restrictions on the use of unprocessed high volatile coals would create a large market for smokeless fuels, and thus make possible a reduction in their price.

St. Louis burns yearly about 6,000,000 tons of coal, of which more than 5,000,000 tons are bituminous or soft coal mined mainly in southern Illinois. Research tests showed that the soft coal could be processed into a non-smoke producing fuel, or that mechanical equipment would take care of the combustion to avoid smoke.

The biggest problem of municipalities with smoke-abatement ordinances is careless burning of fuel, according to a survey of 80 cities cited by the Association. Lack of proper fuel-burning equipment, lack of information on firing, and poor fuel, were given by a third or more of these cities as reasons for difficulty in enforcing their ordinances. Many of the cities, also, reported small appropriations for smoke control, some none at all. St. Louis, which previously had spent approximately $40,000 a year for smoke-prevention activities, will probably need an increase in appropriation, according to local reports, since a larger staff is demanded for enforcement of the new ordinance.

Six Illinois Cities Cooperate on Milk Inspection

A Cooperative Milk-Inspection Plan which has won top rating by the United States Public Health Service for six Chicago suburbs is benefiting them in terms of money savings as well as effective milk control, according to a report from the International City Managers' Association. Winnetka, Ill., largest of the suburbs, performs the inspection service for the municipalities, all of which lie north of Chicago. The other towns cooperating in the plan are Glencoe, Highland Park, Kenilworth, Lake Bluff and Lake Forest.

These six communities, with ten others, are said to be the only communities in the country which have both 100 per cent pasteurized milk, and a "compliance" rating of 90 per cent or more with the Grade A pasteurized milk requirements of the Federal

* See "The Curse of Smoke," in The American City for March, 1940, pages 67-71.

SUN
THE LIGHT O' DAY

DAUNT
THE LIGHT O' NIGHT

DAUNT WHITEWAY LUMINAIRES

- NO COLOR
- NO GLARE
- NO SUBSTITUTES

THE MARVEL UNIT OF 1940 STREET LIGHTING

- BEST BY TEST
- NEW YORK CITY INSTALLS OVER 35,000 DAUNT LUMINAIRES

DAUNT

DESIGNS and BUILDS ALL STEEL LAMP STANDARDS and LIGHTING UNITS

DAUNT

IS THE LARGEST INDEPENDENT ENGINEERING SALES AND MANUFACTURING ORGANIZATION IN WHITEWAY LIGHTING POLES AND LUMINAIRES IN THE U. S.

Write for illustrated Circular

THE Daunt CORPORATION

42-37 13th Street, Long Island City, N. Y.

Whiteway Lighting Poles and Luminaires

THE WILLIAM S. HEWETT SYSTEM
of reinforced concrete construction

results in structures that WILL NOT CRACK, are frost resisting and require no upkeep. This system of reinforcing is applied to circular tanks for the storage of liquids and to thin shell domes. In use more than 18 years; applied to tanks everywhere, with a total capacity of more than 60,000,000 gals. and to domes covering more than 400,000 sq. ft. of surface. We do not build but cooperate with local engineers in the design of structures.

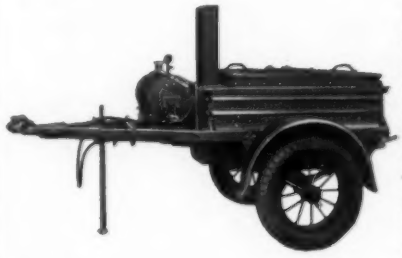
3,000,000-Gal. Water Tank, Colton, Calif.

Write for literature. Estimates furnished without obligation.

The William S. Hewett System

20 N. Wacker Drive, Chicago, Ill.

CONNERY'S

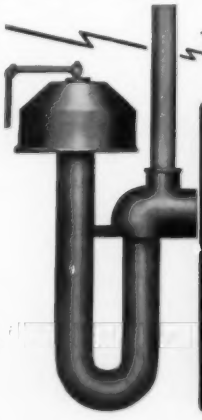


Style "S" 4 Pass Oil-Burning Tar & Asphalt Heating Kettle is the ideal heater for highway maintenance. Fuel costs reduced 50% and hot material furnished twice as fast. Equipped with 6.00 x 20—6-ply, pneumatic - tired wheels with Timken bearings, truck springs and patented hitch for fast and safe towing.

Send today for our complete catalog showing our full line of Tar and Asphalt Heating Kettles, Spraying Attachments, Pouring Pots, etc.

CONNERY CONSTRUCTION COMPANY

4000 North Second St. **Philadelphia, Pa.**



THE MIW Sewage SIPHON

AUTOMATIC SIPHONS FOR SMALL SEWAGE DISPOSAL PLANTS.
NO MOVING PARTS.
MADE IN 3, 4, 5 and 6 inch SIZES.
SEND FOR BULLETIN NO. 305

MODERN IRON WORKS
QUINCY, ILLINOIS, U. S. A.

Throw Away YOUR FLOATS

Use B/W All-Electric Floatless Controls in SEWAGE and WATER PLANTS on well, pits, tanks and reservoirs. Get accurate, unfailing control of liquid levels, with no moving parts in the liquid.

New Bulletin 40 sent on request—no obligation.

B W BENDER WARRICK CORP.
133 PIERCE STREET
BIRMINGHAM, MICHIGAN

Health Service. The other ten are Elgin, Evanston and Waukegan, Ill.; Albert Lea, Rochester and Winona, Minn.; St. Louis, Mo.; and Clinton, Fort Bragg and Tarboro, N. C.

Before the cooperative inspection was adopted, a large proportion of the milk and milk products sold in the six municipalities came from farms and dairies within the area, not subject to the inspection and control of any health authority. Separate inspection by the cities had been tried, but it cost too much and resulted in a lack of uniformity of standards.

As the first step in developing the cooperative inspection plan, each of the towns enacted the milk inspection ordinance recommended by the U. S. Public Health Service. Winnetka, the only one of the towns with a full-time health officer, undertook to contract for the inspection on an annual basis. The contract requires the officer to collect at least one sample of pasteurized milk and cream each month from a delivery truck of each dairy, to determine its bacterial content and butter fat, and to inspect all pasteurization plants monthly, and farms at least three times a year.

Thirteen milk plants and 340 farms are now under the direct inspection of the Health Officer and his two assistants. Farms are inspected on an average every 60 days, and plants every 30 days—oftener than the contract demands. The cost of the inspection service is shared by the towns, which have a total population of 41,000. For the year ending June 30, 1940, the budgeted cost per capita is slightly more than 15 cents.

Thumb-Prints of Pawnbrokers' Customers Aid Police

THE NEW INDIANAPOLIS CITY ORDINANCE requiring pawnbrokers to thumb-print customers before making loans on merchandise has led to the arrest of many known criminals and the recovery of much stolen property, the International Association of Chiefs of Police reports.

The customer's right thumb-print is placed on a special card that is used to record not only the article on which the loan is made, but the description of the person pledging the article, and his signature and address. These cards must be turned over to the police by the pawnbroker before noon of the day following the transaction.

"Since the ordinance went into effect the Department has made 46 arrests attributed to the thumb-print identification," the report said. "In addition to aiding in the recovery of much stolen property, arrests due to thumb-prints have cleared up a number of burglaries, robberies and larcenies.

"In the event we find stolen property in a pawnshop and have no record of the person whose print appears on the pawn card, the card is immediately filed in our identification bureau for further check and reference. If a person is picked up for any charge, his prints are checked against these cards, and several cases have been cleared up in this manner."

The pawnshop detail of the Indianapolis police visits all pawnshops several times a day, and checks the articles taken in against the description given on the cards to verify serial numbers and other data.

The report said that a similar ordinance is being prepared to extend the same regulation to second-hand stores, junk shops and all other types of stores where second-hand articles and property of every description is received, including property traded in on new or other second-hand merchandise.

In upholding the constitutionality of the ordinance recently, the Indiana State Supreme Court gave as one reason that the provision regarding thumb-prints does not transgress upon personal liberty, and that the measure has a direct relationship to the detection of crime and therefore is not arbitrary or unreasonable.

$3.71 *Per Capita for Municipal Fire Protection*

CITIES OF THE UNITED STATES hired 1.39 firemen per 1,000 population in 1939 and spent $152,671,437—$3.02 per capita—for their salaries, according to a survey in the 1940 Municipal Year Book just issued by the International City Managers' Association. Other fire department expenses amounted to 69 cents per capita in the 570 cities of more than 10,000 population included in the survey.

Although the cities of moderate size tend to have more firemen per capita, there is little relationship between the size of fire departments and the size of the cities they serve, the survey showed. Cities over 500,000 population, for example, report 1.37 firemen per 1,000 persons, while cities of 100,000-200,000 report 1.49 firemen per thousand. New York City reported the largest number of firemen — 11,101 — with Chicago, 2,916, and Philadelphia, 2,224, coming next. Comparisons between the personnel figures of individual cities are to be made with caution, the survey said, since the amount of property to be protected, the area of the city, and the kinds of risks involved vary greatly among cities of the same size.

Half the smallest communities pay their firemen starting salaries of $1,492 or more; while half the largest cities offer starting pay of $1,825 or more. Typical top salaries range from $1,620 in the smallest cities to $2,310 in the largest. These salaries are comparable to salaries of policemen in cities of the same size. Typical salaries of fire chiefs vary from $2,100 in the smaller cities to $6,500 in the larger ones, and are generally comparable to those of police chiefs.

The fire department is one of nine factors considered by the National Board of Fire Underwriters and other rating agencies in grading municipal fire defenses. It represents 30 per cent of the total possible number of "points of deficiency" which fix the classification of the city—Class I to Class X—for fire insurance rates. Property owners in cities with extreme deficiency rating—Class X—pay the highest fire insurance premium rates.

In 1939, according to the survey, 25 cities of over 30,000 population were regraded by the National Board of Fire Underwriters. Eight of these cities received reductions in the total number of points of deficiency, but in only three cases was the reduction large enough to put the city in a more desirable class. These cities were Lexington, Ky., Portland, Ore., and Tacoma.

The Municipal Bond Market

Recent sales of new issues from April numbers of *The Bond Buyer*:

Amount	Borower and Purpose	Rate (%)	Term (Years)	Basis (%)
$120,000	Watertown, Mass., Municipal Relief, Act of 1939	.5	1-5 Ser.	.48
$120,000	Fresno Co., Calif., School	1.25	5-8 Ser.	1.23
150,000	Chester, Pa., Funding and Improvement	1.5	1-10 Ser.	1.35
300,000	Kenosha, Wis., Corporate Purpose	1	2.66-5.5	1.82
100,000	Wilkes-Barre, Pa., Funding and Improvement	2	O.-A. 9.33 Avg.	1.89
100,000	Lancaster, Ohio, Sewage-Treatment Plant and Storm Sewer	2	16.33 Avg.	1.98
225,000	Rotterdam, N. Y., District	2.10	13.85 Avg.	2.09
135,000	West Boylston, Mass., Water District, Act of 1933	2.25	16 Avg.	2.10
235,000	Toledo, Ohio, Indebtedness Liquidating	2.25	5-9 Ser.	2.18
267,000	Loveland, Colo., Water-Works Refunding	2.25	6.75 Avg.	2.25
495,000	Palm Beach, Fla., General Improvement	2.50	8.85 Avg.	2.30

4-POINT CONTACT

Mueller-Columbian parallel seat, double disc Gate Valves use the FOUR-POINT principle of applying wedging action against the valve discs. The force is applied equally at four points near the edges of each disc which reduces the mechanical strain and deflection of the discs.

This is an exclusive feature found only in Mueller-Columbian Gate Valves and is one very good reason why they have a reputation among water works men for dependable service and low maintenance cost.

MUELLER CO.

CHATTANOOGA, TENN.

Prepared by
FRANK B. WILLIAMS
Author of "The Law of City Planning and Zoning"

Zoning and Planning Notes

With the cooperation of
EDWARD M. BASSETT
Author of "Zoning" and of "The Master Plan"

Accessory Use—Lot

CONNECTICUT.—*First National Bank and Trust Co. of Greenwich v. Zoning Board of Greenwich,** 126 Conn. 228 (Supreme Court, January, 1940).—The plaintiff bank owned an island and a mainland lot, separated by water except at low tide, when connection was made by stepping stones. One of the buildings on the island was used as a night club, and the mainland lot served as a parking place. On complaint of neighboring owners the use of the lot as a parking place was ordered discontinued by the building inspector. Petition for a variance was rejected by the Board of Appeals and the plaintiff then appealed to the Court, claiming that the land on the mainland and the island were part of the same lot and that parking should be allowed as an accessory use.

The trial court found that even though the plaintiff owned the land connecting the mainland and the island, the plaintiff's holdings did not constitute one lot. In upholding this ruling of the trial court, the Supreme Court of Connecticut held that lands in the same ownership on opposite sides of navigable water could no more be parts of the same lot than lands on opposite sides of a public highway.

* From *Planning and Civic Comment.*

Board of Adjustment—Variance

NEW JERSEY.—*Brandon v. Board of Commissioners of Town of Montclair,* 11 Atl. 2d, 304 (Supreme Court, February 15, 1940).—This is certiorari to review a resolution adopted by the Board of Adjustment of the town of Montclair recommending that a building permit be issued by one Kent and another, and a resolution of the Board of Commissioners of the town approving the recommendation, subject to the condition that the Building Inspector of the town be clothed by the applicant with authority to interpret the conditions laid down by the Board of Adjustment. These resolutions the Court vacates, and remands the cause for further proceedings.

The applicant wished to build "garden type of apartments" for more than one family, in a district where only one-family dwellings are allowed. The lands are located more than 150 feet from the line of any zone in which the proposed use is permissible; and therefore, under the New Jersey law the Board of Adjustment, instead of granting a variance, can only recommend the granting of it, the grant being subject to the approval of the town's legislative body, the Board of Commissioners.

The Court holds that the favorable action in such a case, both by the Board of Adjustment and by the Board of Commissioners, must be upon a finding of unnecessary hardship; that the Board of Adjustment acts in a semi-judicial capacity; and that the legislative body does not in such cases act in a legislative capacity, but also acts in a semi-judicial capacity; both bodies being bound to use a sound discretion, and the action of both is reviewable by certiorari. In both cases, also, the fact that such hardship existed must appear in the finding, which certiorari brings before the court for review. In this case no such hardship appears in the record. Indeed, there are indications that such was not the basis of action, the reason being rather the belief that the town needed garden apartments.

"Thus," as the Court says, "it is fairly inferable from the return in this behalf that these municipal bodies in so proceeding overlooked the essential distinction between local legislative zoning power and the power to make individual variations from regulations generally reasonable in order to subserve the spirit of the statute and the ordinance, or, having made the ordinance, disregarded it. The one is a legislative act, valid if not in contravention of constitutional limitations; the other is a quasi-judicial function, granted in discretion, reviewable in certiorari.

The Court also observes that there is nothing to the contention that the condition that the Building Inspector should be clothed by the applicant with authority to interpret the conditions laid down by the Board of Adjusment, delegates unlawful power to the Inspector. In the performance of this duty the Inspector would act only in a ministerial capacity to enforce the conditions of the grant as written. He could not in his discretion vary or modify them.

Retroactive Zoning

NEW YORK.—*Bayinsky v. Kesbec, Inc.,* reported in *New York Law Journal,* December 21, 1939.—In this case, the opinion of the Court is (in part) as follows:

The operation by the defendant of the business of parking and storing more than five motor vehicles on the premises in question violates not only the provisions of the Amended Building Zone Resolution, Article II, section 4, subdivision A, subsection 15, but also Article V, section 21. The former provision makes illegal the use of any premises in a business district for the storing or parking of more than five motor vehicles. The latter provision prohibits the operation on any premises which are either within 200 feet of an entrance or exit to a public school, or are on a portion of a street between two intersecting streets in which portion there exists an entrance or exit to a public school, of the business of parking or storing more than five motor vehicles. The record establishes that the defendant's use of the premises is in conflict with both of these zoning resolutions, and therefore such use is illegal (see *Boyd v. Walsh,* 217 App. Div., 461, aff'd 244 N. Y., 512). An application for a variance of the Building Zone Resolution has been denied by the Board of Standards and Appeals (Cal. No. 389-36-BZ). The fact that the defendant's use antedates the enactment of the Building Zone Resolution does not operate in favor of the defendant. The precise question here raised and the very argument presented by the defendant in this case have already been determined adversely to the position of the defendant by the Court of Appeals in *People &c. v. Wolfe* (248 App. Div. 721, aff'd 272 N. Y. 608) and in *People &c. v. Kesbec* (257 App. Div., 941, aff'd 281 N. Y. 209), when it held that the provisions of the Building Zone Resolution were retroactive and their retroactive effect did not violate any constitutional principle (see also *Hodachek v. Los Angeles* 239 U. S., 394).

Judgment accordingly is directed in favor of the plaintiffs, restraining the defendant from the use of its premises in violation of the Building Zone Resolution.

School — Garage

NEW YORK.—*Matter of Harlem Savings Bank (Murdock et al)* Supreme Court, New York County, reported in *New York Law Journal,* October 14, 1939, page 1125. The petitioner in this case is seeking to use its premises on 39th Street, New York City, for the parking and storage of more than five automobiles. Under the city Zoning Resolution no garage for such use on any portion of a street between two intersecting streets in which portion there exists an exit from or an entrance to a public school, is allowed.

The school in question is conducted by the Children's Aid Society. The entrance to the school is on 38th Street; but there is an exit from it on 39th Street, between the two intersecting streets in question, used by the children, and the playground attached to the school is located there. The Court holds that this is an exit from the school, within the meaning of the prohibition.

The Court also holds that the school is a public school within the meaning of the Zoning Resolution. The protection afforded by the statute is primarily for the children and not for the school, which is aided by the supervision of the Board of Education and the city authorities. The Court is confident that the Children's Aid Society, which is educating these children not only intellectually but also with a view to character formation, can clearly come within the term "educational corporation."

WORTHINGTON - GAMON

Worthington-Gamon Meters represent the utmost in durability and accuracy, to meet present and future requirements.

WORTHINGTON-GAMON METER CO.
General Offices: HARRISON, NEW JERSEY

WORTHINGTON - GAMON

SIMPLEX
RATE-OF-FLOW CONTROLLERS

Offer the following advantages:

1. Simplification of Piping Layout.
2. Reduction of Construction and Installation Costs.
3. Simplification of Maintenance Problems.
4. Reduction of Unrecoverable Head Loss Across Controller.
5. Flexibility of Installation.
6. Utilization of more of the Available Operating Head by Reducing Pipe Friction.

WRITE FOR BOOKLET

SIMPLEX VALVE & METER COMPANY
6789 Upland Street Philadelphia, Pa.

Gauges, Air Valves and other Water Works Services. Manufacturers of Meters and Controllers of the Venturi Type

DOING ANY SEWER CLEANING?

- Sewer Rods
- Sewer Cleaning Tools
- Sewer Cleaning Machines
- Sewer Cleaning Buckets
- Root Cutters

Machines Leased and Sold
No Minimum Charge on Rentals
Rods and Machines Sent on Approval

W. H. STEWART
Manufacturers of a complete line of Sewer Cleaning Equipment since 1901.
Jacksonville, Fla. P. O. Box 581 — Windsor, Ont., Can. 779 Argyle Rd., — Syracuse, N. Y. P. O. Box 767

LOCK JOINT REINFORCED CONCRETE PIPE
LOCK JOINT PIPE CO., Established 1905 AMPERE, N. J.
PRESSURE • SUBAQUEOUS • SEWER • CULVERT

"Duophoto" it yourself in a jiffy!

Don't send your valuable papers out of your office . . . simply "Duophoto" them, and make exact copies of anything written, printed, drawn, in a few seconds. Anyone can operate it.

Duophoto CORP. 30 W. 25th St. New York, N. Y.

Write for descriptive folder D-9 and prices.

Aeroil TAR KETTLES
SAVE 50% ON FUEL
HEAT TWICE AS FAST
COMPLETELY INSULATED - HEATED from the INSIDE

Latest development for heating tar, pitch, asphalt and other bituminous materials, quickly and economically.

AEROIL BURNER CO., Inc.
Box 599 — West New York, N. J.
BRANCHES
Chicago • San Francisco • Dallas, Texas

FREE
SEND FOR NEW 12-PAGE CATALOG ON THIS REMARKABLE NEW HEATER
Ask for Bulletin 182-H

Municipal Law Notes and Decisions

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS, Washington, D. C.
JOHN A. McINTIRE and CHARLES S. RHYNE, Legal Counsel

Labor Relations—Power of City to Enter into Closed Shop Union Contract

With the nation-wide movement to unionize all private industry has come a similar movement to unionize municipal employees. There is no legal objection to municipal employee unions, but legal difficulties have arisen in attempting to carry out union programs involving contracts between cities and unions relative to wages, hours, and arbitration of questions of discharge and performance of duty by such union members. A discussion of the arguments presented on both sides of this important question is of current interest and usefulness, for undoubtedly the legal rules in this field of law are changing very rapidly.

For a digest of the union contract with the city of Reading, Pa., and a discussion of the legal principles to support the contract, see *Hoopes*, Labor Contracts by Municipalities, *Municipalities and the Law in Action* 1938-B. The Reading contract provides only for collective bargaining and adjustment of grievances. There is no provision for a closed shop or for a check-off of union dues. Mr. Hoopes declares there are no court decisions supporting the legality of such a contract, but recent legislation, both Federal and state, has definitely declared public policy in favor of labor unions and collective bargaining, so he believes the courts should find the contract valid. Some support for Mr. Hoopes' opinion is found in *Amalithone Realty Co. Inc.* v. *City of New York*, 295 N. Y. Supp. 423 (1937), affirmed 297 N. Y. Supp. 262 (1937), where the Court upheld the power of the city to require work or materials to be supplied by union labor. In this case, however, the Court also held that the city could, as between two unions submitting bids for printing, select the union which would do the best work, and such selection would not be interfered with in the absence of a showing of bad faith. *French* v. *McGoldrick*, 4 N. Y. Supp. (2d) 306 (1938), affirmed 278 N. Y. 645, 16 N. E. (2d) 300 (1938), upholds the validity of a city of New York requirement that a contractor on city work pay a wage scale fixed by the city. In accord with this decision is *Stover* v. *Winston Bros. Co.*, 185 Wash. 416, 55 P. (2d) 821 (1936).

On the other side of the picture we find the last word on this subject is an opinion of Special Assistant Attorney General George B. Sjoselius of Minnesota, dated February 28, 1940, to City Attorney B. E. Hughes of the city of Austin, Minn., holding that the city of Austin had no power to enter into a contract by which membership in a certain labor union is made a prerequisite to working for the municipally owned gas system. The Gas Construction Workers Unit of the CIO had presented the City Board which operates the gas distribution system for the city with a contract demanding among other things that the Board maintain a constant force in this department the year around whether the Board actually needs it or not, and providing for wages, seniority and other similar matters. The proposed contract also provided that any person employed in that particular department must join the CIO union within one week after being employed or he would be discharged; or if an employee was discharged by the union from its membership, the Board would be required to discharge the employee in turn within one week. The contract provided for the right to discharge employees upon neglect of duty or the wilful and continued neglect of duty or for drunkenness upon the job, if such charges were proved to the satisfaction of the man's fellow workers. After reviewing a number of cases and authorities, Assistant Attorney General Sjoselius concluded that "it is apparent that the effect of the proposed contract will be to delegate to a private organization functions which are reposed by law and charter provisions in the Board of Commissioners. Under the court decisions cited, this may not legally be done."

In Report No. 33, February, 1938, the National Institute of Municipal Law Officers published an opinion of the Institute's legal staff holding that a city's Public Auditorium Authority could not legally enter into a standard labor agreement including hours of labor, layoffs, appointments, and other provisions usually incident to such an agreement. The basis of the Institute's opinion was that a city has no legal right to discriminate between different classes of citizens and their right to obtain public employment, and city officers cannot delegate their legal duties relative to city employees to a private organization.

On May 21, 1938, Attorney General Clarence W. Meadows of West Virginia in an opinion to State Superintendent of Free Schools W. W. Trent ruled that boards of education do not have the power and authority to enter into union contracts for collective bargaining with reference to teachers and employees of said boards. The basis of Attorney General Meadows' opinion was that since the Legislature placed the power relative to the employment of teachers and others in the hands of designated public officials and boards, such power rests alone in the hands of those so designated, and any attempt to limit this power or to prescribe terms and conditions relative to such employment different from those prescribed by the Legislature would be in excess of the power delegated and hence illegal and unenforceable.

On December 9, 1939, Judge Henry J. Ingram of the Circuit Court of Illinois restrained the Board of Education of the city of Peoria from carrying out a labor agreement with Firemen and Oilers Local 8-A, AFL. The agreement provided that all persons working for the Board in certain capacities should be members of the union and contained the usual wage, hour and discharge provisions. Judge Ingram held that the Board had no power to discriminate between citizens in selecting its employees, and the contract was an illegal and unconstitutional delegation of the Board's power to the union.

The opinion concludes:

> "It would not be contended that the Legislature of our state could pass a law providing that certain work required by the state or by a board of education should be done only by members of a particular organization. Such a law would be unconstitutional and void on the ground of discrimination. So, a school board, an agency and creature of the state, which could have no more authority in this regard than the state itself, cannot enter into a contract of the nature of the one involved in this case except under the penalty of its being illegal and void for the same reason. It may be true that without any contract the board can employ members of the local in question to the exclusion of non-members. It may be within its discretion to do so. The board cannot, however, by contract, foreclose the possibility of a non-member securing employment. The law finds no fault with a school board employing union labor or with its employees belonging to labor unions, but it does not permit the board to bind itself by contract to employ only those who belong to a particular association or organization. In that respect the contract is illegal and funds expended under and by virtue of such a contract would necessarily amount to an illegal expenditure of public funds, and a taxpayer may maintain a suit for injunction.
>
> "For the foregoing reasons this Court concludes that it is the settled law of this state that public or municipal corporations, as school boards and cities, although free to employ whom they will, cannot by contract, rules or ordinances provide that public work can be performed only by members of certain organizations. This is true whether the organizations in question be trades unions, societies, associations or any other particular groups of individuals."

Chapin v. *Board of Education of the City of Peoria*, 5 *Municipal Law Journal* 24.

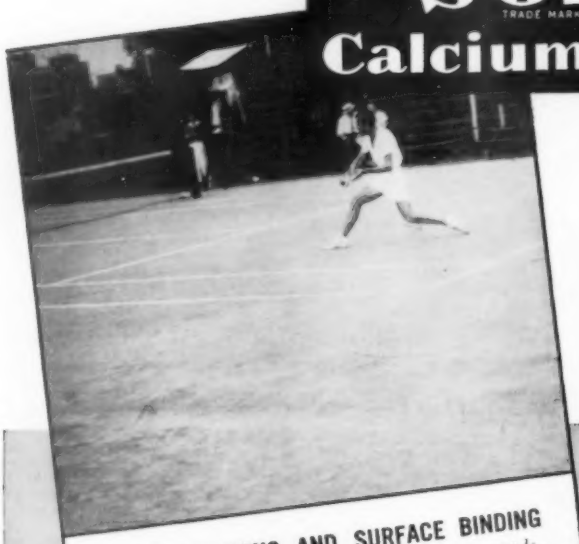
It is well settled that the city or other public body is without authority, in determining the lowest responsible bidder for a public contract, to discriminate between contractors employing organized and those employing unorganized labor. *McQuillin, Municipal Corporations* §1305. In other words, a municipality in letting contracts is without power to discriminate in favor of union labor. Leading cases establishing this rule are: *Adams* v. *Brenan*, 177 Ill. 194, 52 N. E. 314 (1898); *Miller* v. *City of Des Moines*, 143 Iowa 409, 122 N. W. 226 (1909); *Lewis* v. *Board of Education of the City of Detroit*, 139 Mich. 306, 102 N. W. 756 (1905); and *Marshall and B. Co.* v. *City of Nashville*, 109 Tenn. 495, 71 S. W. 815 (1902).

One interesting case is that of *People* v. *City of Chicago*, 199 Ill. App. 356 (1916) holding that a city board had no power to pass a rule prohibiting membership in a trade union and refusing employment because of such membership. The Court based its decision upon the discrimination between citizens, and declared the rule to be unreasonable and therefore unconstitutional. The rule prohibiting discrimination thus works both ways. Compare with *French* v. *McGoldrick*, and *Stover* v. *Winston Bros.*, *supra*, the decisions in *Bohn* v. *Salt Lake City*, 79 Utah 121, 8 P (2d) 591 (1932), *Harlan* v. *Employers Association of Maryland*, 162 Md. 124, 159 Atl. 267 (1931) and *Hillig* v. *City of St. Louis*, 337 Mo. 291, 85 S. W. (2d) 91 (1935), all of which reach a contrary result.

Involved with this general question of the legal power of a city to contract with a labor union is the legal right of municipal employees to call a strike to force public officials to comply with the demands of the employees. This particular problem has been discussed by many persons, but no court decisions have come to our attention. The threat of a strike by New York City transit system workers over questions involved in the transfer to city control of that system focused attention again on this problem in recent weeks. Former United States Attorney General Frank Murphy, in August, 1939, at a press conference announced an informal opinion that there was no right to strike against the Government. His opinion came in connection with a threatened strike of WPA employees. Civil service statutes and regulations are designed to give the fullest protection to municipal employees and to provide a method, approved by public policy, for adjustment of all grievances. Where civil service statutes do not exist, there are usually statutory, charter or ordinance provisions providing for hearings before discharge, or other protection for municipal employees. If civil service or other statutes, charters or ordinances do not provide all the rights city employees believe they are entitled to, they have the right to sponsor legislation providing additional rights. Some writers base their opinion that public employees have no right to strike upon a public policy designed to prevent danger to the lives and health of the public such as would be created if, for example, city police or firemen could strike and cut off essential municipal services.

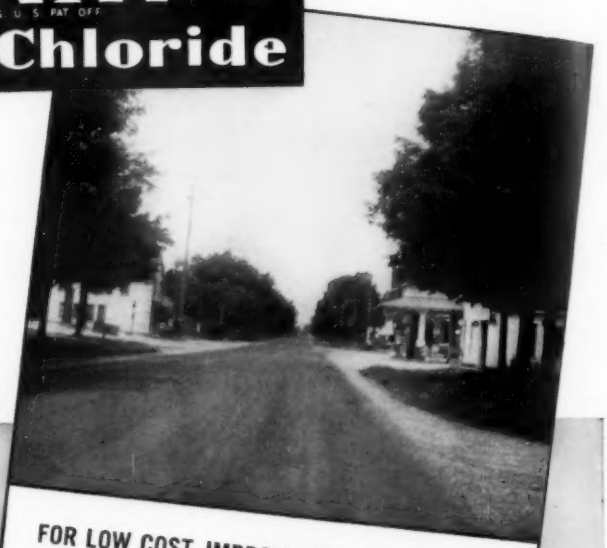
CLEAN, ODORLESS, LOW COST
TREATMENT FOR ALL
UNPAVED SURFACES

SOLVAY
TRADE MARK REG. U. S. PAT. OFF.
Calcium Chloride



FOR DUSTLAYING AND SURFACE BINDING ON . . . *Tennis Courts, School Yards, Playgrounds, Park Areas, Athletic Fields, Parking Lots.*

Solvay Calcium Chloride has been used for over 20 years to end dust and weeds. It does not track or stain . . . requires no previous experience or elaborate equipment . . . *is definitely low in cost.*



FOR LOW COST IMPROVEMENT OF UNPAVED STREETS . . . The Solvay Calcium Chloride method of *surface consolidation* is ideal for improving unpaved streets at remarkably low costs. The savings in maintenance expense often more than pays for the treatment. Streets maintained with Solvay Calcium Chloride also make *excellent bases* for future high type paving.

BETTER CONCRETE IN LESS TIME WITH SOLVAY CALCIUM CHLORIDE . . . Save time, money and labor on all concrete work and obtain denser, stronger concrete by adding Solvay Calcium Chloride to the mix. Streets repaired with Portland Cement to which Solvay Calcium Chloride has been added can be opened to traffic in less than one half the usual time. Increases early as well as ultimate strength.

SOLVAY SALES CORPORATION

Alkalies and Chemical Products Manufactured by The Solvay Process Company

40 RECTOR STREET **NEW YORK, N. Y.**

BRANCH SALES OFFICES:

Boston : Charlotte : Chicago : Cincinnati : Cleveland : Detroit
New Orleans : New York : Philadelphia : Pittsburgh : St. Louis : Syracuse

SOLVAY CALCIUM CHLORIDE
FOR ENDING DUST . . .
COMPACTING UNPAVED SURFACES

SOLVAY SALES CORPORATION,
40 Rector Street, New York, N. Y.

Please send me the literature which I have checked below:

☐ Dustlaying Booklet: *"Clean White Flakes That End Dust and Weeds."*
☐ Road and Street Book: *"High Service—Low Cost Roads."*
☐ Concrete Book: *"Calcium Chloride and Portland Cement."*

Name _____

Affiliated with _____

Position _____

Address _____

City _____ *State* _____ 61

Municipal and Civic Publications

Please mention THE AMERICAN CITY when ordering

Municipal Year Book

The Municipal Year Book, 1940.—The International City Managers' Association, 1313 E. 60th St., Chicago, Ill. x + 629 *pp.* $5.00.

The editors of the Municipal Year Book have succeeded in adding again to the usefulness of this volume, now in its 7th edition, with the addition of new sections, and with a new arrangement of content whereby material pertaining to any function or activity of municipal government is grouped in a single section. New material includes: an article reviewing developments in public service training; a directory of mayors and city clerks in cities from 5,000 to 10,000 population; a source list of directories of local officials; and statistics on civic service agencies, number of local taxing units in the United States, centralized purchasing, annual municipal reports, city planning, hospitals, housing authorities, parking meters, traffic accidents, and refuse collection and disposal practices.

The five principal parts of the book are: Governmental Units, Municipal Personnel, Municipal Finance, Municipal Activities, Directories of Officials. Contained in this volume are, as usual, up-to-date accounts of developments in the various fields of municipal activity, and lists of model ordinances, references in each field of municipal activity, sources of municipal statistics, publications issued in 1939, services available from Federal and national agencies.

Tax Delinquency

Trend of Tax Delinquency, 1930-1939.—By Frederick L. Bird. Municipal Service Department, Dun & Bradstreet, Inc., 290 Broadway, New York. 1940. 36 *pp.*

"Municipal tax delinquency in 1939 was the lowest in a decade."

This trend is pointed out among others in this annual summary of general trends in municipal tax delinquency, over the ten-year period, in 190 cities of over 50,000 population. The report shows relative community stability and the efficiency of different cities' collection systems by an analysis of year-end delinquency from 1930 to 1939. It considers total collections, including the collection of arrears; and the collection of delinquent taxes including the ultimate collectibility of these taxes and their proportion to the 1939 level. (See p. 95.)

Water Conference

Report of Ohio Conference on Water Purification held at Toledo, Ohio, October, 1939.—Ohio Conference on Water Purification, Depts. of State Bldg., Columbus, Ohio. 1940. 114 *pp.*

Reports on what is being done in water supply and purification in Ohio cities—particularly new methods—comprise most of the talks printed in these Proceedings, which also contain discussions of water purification literature, operation of a swimming pool, coagulation studies using a laboratory stirrer, a symposium on improving water quality, and two talks on hydraulics.

Water-Works Records

Coordinating Operating System Records with Accounting Records.—By Nathan B. Jacobs. American Water Works Association, 22 E. 40th St., New York. 1940. 17 *pp.*

The "Manual of Water Works Accounting" was published in 1938 by the Municipal Finance Officers Association and the American Water Works Association. In 1939 the latter published "Suggested Standard Practice for Distribution System Records." This pamphlet suggests how to adapt record cards from the latter report, for use as accounting record forms. The advantages to accrue from this coordination between the branches of the water works are reduced clerical work, better records, increased cooperation between the two departments.

Airports

Aviation Gets Down to Earth—The Growing Need for Public Landing Fields.—By Stedman Shumway Hanks, Lieut.-Colonel, Pilot, U. S. Army Air Corps Reserve. Aviation Information Service, 80 Boylston St., Boston, Mass. 1940. 121 *pp.* $2.00.

Development of ground facilities for airplanes has lagged behind progress in the rest of the aviation field: "We are today in the same position with reference to ground facilities for aircraft as . . . were the automobiles before they had smooth highways. . . ." A compact statement of the problem is presented in this small book, which is particularly comprehensive in its coverage of all the aspects and interests related and concerned: real estate, legislation, other modes of transportation, the aviation industry, state police, highway rights-of-way, national defense, and various aspects of the construction, financing and maintenance of airports.

Aviation

The Story of Flying.—By Archibald Black, Whittlesey House, McGraw-Hill Book Co., New York, 1940. 267 *pp.* $2.75 *from* THE AMERICAN CITY.

This book on man's conquest of the air is written in an interesting style, beginning with the earliest aspirations of man to conquer the air, and carrying on with his plans for the future. In the latter portion of the book several chapters are devoted to current activities in various branches of flying, including photography, airways development, the automatic pilot, and other new apparatus. Only one chapter is devoted to airports, airways and radio, but all who are interested in aviation will find the book worth reading.

Transportation

Moving the Masses in Modern Cities.—American Transit Association, 292 Madison Ave., New York. 1940. 31 *pp.*

This brief pamphlet points out the fact that the same road area can carry a much greater passenger load in buses or other transit vehicles than it can carry in automobiles; that besides the disproportionate space on the road which autos occupy per number of persons carried, is the space they fill up when parked in the city. In sum, the pamphlet puts the case for the relatively cheap cost of building transit facilities as contrasted to the expense of adding lanes to streets or building elevated highways, and presents the former as one possible means of counteracting decentralization in large cities. (See page 97 in this issue.)

Mayors' Conference

City Problems of the South, 1940.—Edited by Paul V. Betters, Executive Director, The United States Conference of Mayors, 730 Jackson Place, Washington, D. C. 1940. iii + 138 *pp.*

Many of the pressing problems facing the South are considered in the talks and discussions published in these Proceedings of the Southern Regional Conference of the United States Conference of Mayors. Some of the country's best-known mayors were among those giving the talks, which cover such problems as Federal taxation of municipal bonds, housing, health, airports, fire insurance, WPA, municipal self-government, revenue. (See p. 5 of April issue for resolutions adopted.)

Sanitation

Plumbing and Public Health—A Bibliography.—By Arthur P. Miller, Sanitary Engineer-In-Charge, Interstate Sanitary District No. 1, U. S. Public Health Service, Sub-Treasury Bldg., New York.

360 references, including a few in foreign languages, are arranged in this bibliography according to author or other source.

Fighting Fire in New York

History of the New York Fire Department.—By Lowell M. Limpus. E. P. Dutton and Co., Inc., New York. 1940. 380 *pp.* $3.50 *from* THE AMERICAN CITY.

Highly dramatic is the story of the development of fire fighting and prevention in New York City from 1731 when the first fire department consisted of 30 volunteers and the first hand fire "ingen" was "7 feete wide on ye board" and "manned by 12 tugmen eleven bucket men and 1 pipe man," to the present day when the Bureau of Fire Extinguishment of the department alone consists of "220 engine companies, 125 hook-and-ladder companies, 10 fireboats, 4 rescue squads, etc." It is this story which moves rapidly in the detailed account of the growth and functioning of the New York Fire Department; of the seven great fires which swept New York, including the tragic conflagration of 1776 which wiped out one-eighth of the city's buildings; of the struggles with machine politics; of the gradual raising of standards—the professionalization of fire fighting, the motorization of fire apparatus; of the personalities, incidents and historical background which make up the story.

The New York Fire Department—Manual of Instruction.—Edited by Lowell M. Limpus. E. P. Dutton and Co., Inc., New York. 1940. 255 *pp.* $1.85 *from* THE AMERICAN CITY.

A companion volume to the one above, this manual summarizes lectures on the technical aspects of fire fighting, given from 1934 to 1939, at the New York Fire College, to officers of the New York Fire Department. The subject matter covers the use of apparatus and equipment; fighting fires in multiple dwellings, in places of public assembly and along waterfronts; rescue work; routine work of the Department; unusual perils and problems. Included also are the Department's "Rules and Regulations" and "Official Action Guide."

Fire Fighting

Fundamentals of Fire Fighting Tactics.—By Lloyd Layman, Chief, Parkersburg Fire Department. Magruder Publishing Co., Parkersburg, W. Va. 1940. 71 *pp.*

Compact text on fire-fighting tactics, which has been developed over a period of years in teaching both paid and volunteer departments. It outlines clearly the following aspects: size-up, rescue, exposures, confining fire, extinguishing fire, ventilation, salvage, overhaul, use of tactical problems.

Fire Protection School

Report of Fire Protection School for Building Supervisors and Maintenance Operators.—Portland Fire College, Bureau of Fire, Portland, Ore. 1940. 176 *pp.*

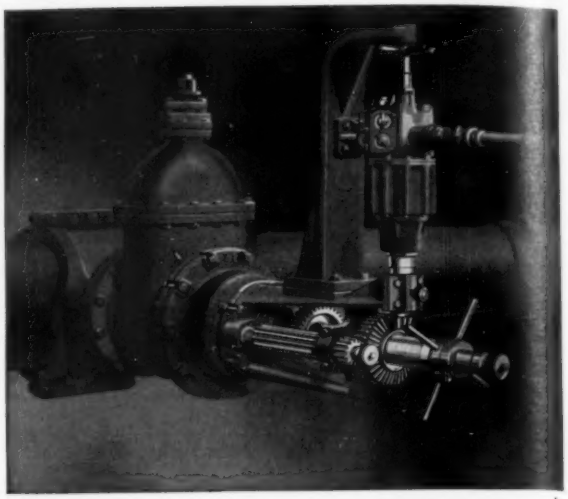
The lectures and other illustrative material used at the Fire Protection School for Building Supervisors and Maintenance Operators are published in this report. They cover causes of fires in buildings (dust explosions, electric wiring, kitchen fires, etc.), precautions that can be taken to prevent such fires, and the part of the supervisor once a fire has started (first aid, fire-fighting equipment, sprinkler systems, etc.).

Fire Prevention

Fire Exposure Tests of Tin-Clad Fire Doors on Opposite Fire-Wall Faces.—Underwriters' Laboratories, Inc., National Board of Fire Underwriters, 85 John St., New York. 1940. 23 *pp.*

This bulletin describes the fire-retardant performance of standard three-ply, wood-core, tin-clad sliding fire doors when mounted in a standard manner for Class "A" situations, viz., one on each face of a fire-wall opening, and subjected to fire exposure and hose stream impact, in accordance with the Standard Specifications for Fire Test of Building Construction and Materials.

SMITH TAPPING MACHINES



The Smith Tapping Machine for making branch connections to water and gas mains under pressure is the most reliable machine for the purpose made—as well as the simplest, lightest, strongest, most economical and most easily handled.

Sizes are available for making taps all the way from 2" to 42". We rent the larger machines, supplying a foreman to superintend their use. The smaller sizes are sold or rented. The machines can be furnished with air motor, if desired. If you wish to purchase your own air motor, tell us what make and size, and we will fit your Smith Tapping Machine with an adapter.

● Write for Bulletin 37-M on SMITH Tapping and Inserting Machines and Accessories.

THE A. P. SMITH MFG. CO.

East Orange N. J.

The EDDY Valve

The Eddy Valve has a number of distinctive features which it will pay you to study. For example, the gates are free to revolve on the trunnions, so as not always to seat in the same position.

Write us for further details.

Also manufacturers of the well-known Eddy Hydrant

EDDY VALVE COMPANY

WATERFORD **NEW YORK**

Representatives

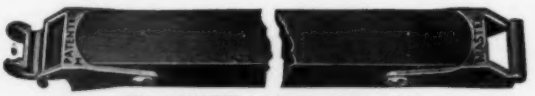
Jas. B. Clow & Sons, Chicago, Ill.

National Cast Iron Pipe Co., Birmingham, Ala.

SURE GRIP SEWER RODS and ACCESSORIES

The REGULAR, a light rod, Fir stock 1¼ x 1¼ inch square.

are joined together with a dual lock forming a rigid chain that will float. They can be coupled or uncoupled upon the street if desired. Made in two sizes.



The MASTER, a heavy duty rod, Fir stock 1½ x 1½ inch square.

Write for catalog on complete line of sewer cleaning equipment.

EXPANDING SEWER MACHINE CO.

NAPPANEE, IND.

Civil Liberties

Safeguarding Our Civil Liberties.—By Robert E. Cushman, Professor of Government, Cornell University. Public Affairs Committee, Inc., 30 Rockefeller Plaza, New York. 1940. 31 *pp.* 10c.

Civil liberties is the subject these days of much animated, and often vague, talk. Just what are the liberties protected by the Bill of Rights, and how they are protected, is not very clear in the average mind. This pamphlet summarizes them, points out war- and peace-time dangers to these liberties, and what the average citizen can do to help protect them. An interesting part of the analysis of the development of the protection of civil liberties in this country is the effect of recent Supreme Court decisions on the meaning of the law.

Liability of Officers

The Tort Liability of Public Officers.—By Leon Thomas David, Assistant City Attorney, Los Angeles. Public Administration Service, 1313 E. 60th St., Chicago, Ill. 1940. 93 *pp.* $1.00.

Although this monograph presents largely the law of California, it is of general interest in other states, particularly with the constantly increasing number of public officials. Chapter heads are as follows: Fundamental Concepts; Absence of the Doctrine of Respondeat Superior in California Common Law; Official Power and Correlative Duty Resulting in Tort Liability; Discretionary Powers and Duties—Legislative, and Liability of Judges; Non-discretionary Functions and Duties; Statutory Liabilities for Negligence.

Municipal Liability

Tort Notice of Claim Statutes—Legal Interpretation and Effect.—National Institute of Municipal Law Officers, 730 Jackson Place, Washington, D. C. 1940. 37 *pp.* $1.00.

This report contains a summary study of statutes requiring the filing of a notice of tort claim against a municipality, prior to bringing suit, and of court interpretations relative to these statutes. It considers the following: purpose and policy of the statute; giving of notice; excuse of non-compliance; manner of giving notice; reasonableness of the statute; compliance with the requirement; contents of the notice.

Peddler Regulation

When Is a Peddler a Peddler.—Arkansas Municipal League in cooperation with the Bureau of Municipal Research of the General Extension Service, University of Arkansas. Apply to the League, 1126 Donaghey Bldg., Little Rock, Ark. 1939. 26 *pp.* $1.00.

What to do about a peddler if he is a peddler, is what this report sets out to clarify. Definitions are presented for classifying the operations of transient sellers either as those of a peddler, itinerant vendor, solicitor, or transient merchant. Limitations on the regulations that may be imposed on each of these types of sellers are outlined, as well as methods of taxing and regulating their activities. Suggested ordinances are included. Although written for Arkansas cities, the pamphlet should be helpful to cities in other states.

Employment

City Government Employees and Pay Rolls, January, 1940.—Bureau of the Census, Department of Commerce, Washington, D. C. 1940. 26 *pp.*

Contained in table form in this bulletin are figures showing employees and pay rolls—exclusive of employees and pay rolls of schools, work relief and contractors—for 82 per cent of the 960 cities in the United States having a population over 10,000. Besides total number of employees, figures give number of those employed in general governmental functions, on a permanent (both full and part time) and temporary basis, and those employed in public-service enterprises. Total pay rolls for the month of January, 1940, and the calendar year, 1939, are given for both general government functions and public service enterprises.

City Guides

Metropolis—A Study of New York. 1939. x + 184 *pp. Your Washington.* 1938. ix + 193 *pp. Both by Mary Field Parton. Longmans, Green & Co., New York.* $2, *each.*

Here are two books by the same author intended as guides for young people into the wonders and beauties of two great American cities. Both are picturesque accounts of the cities, containing some historical background. The first portrays the bigness of the world's largest metropolitan city in terms of its government, its industries, and its people. The second is chiefly an excursion through the whole group of government buildings in the nation's capital, beginning with the National Capitol and ending with the Department of Agriculture building. These illustrated volumes should be valuable as supplements to textbooks on citizenship used in the public schools. Each is written in a conversational tone which is designed to stimulate the imagination of young people along the line of democracy.

One defect seems apparent in both volumes. While it is highly desirable to emphasize the scenic beauty and structural vastness of these two cities, one must not ignore the fact that at the same time these places abound with sordid pictures of misery and squalor—so well illustrated in the works of Paul Morand, Charles Weller, and the numerous studies of planning commissions. The unpleasant is also a part of the understanding of democracy as it functions in New York City and Washington.

GEORGE SNOWDEN.

Plan for Washington

A Federal City Program Adopted by the Executive Committee of the Committee of 100 on the Federal City, American Planning and Civic Association.—Apply to the Association, 901 Union Trust Bldg., Washington, D. C. 1940. 19 *pp.*

The Committee of 100 on the Federal City was formed in 1922. In 1924 it presented its recommendations for the planning of the national capital. A new set of Recommendations presented this January at a dinner in Washington are printed in this bulletin, together with a Comparison of the Recommendations of the Committee of 100 on the Federal City in 1924 with Accomplishments Between 1924-1940, and a History of the Committee of 100. The 1940 program covers: architecture; forests and park reserves; school sites and playgrounds; housing; zoning; streets; highways and transit; waterfront development; billboards and signs.

Civil Service

Civil Service in Public Welfare—A Discussion of Effective Selection of Public Social Work Personnel Through the Merit System.—By Alice Campbell Klein. Russell Sage Foundation, 130 E. 22d St., New York. 1940. 444 *pp.* $2.25.

Civil service has recently acquired significance in the professional social work picture—a result of the shift of the burden of relief from private to public auspices, and the extension of the civil service movement to new areas. Civil service standards and procedures in the social work field are still in the formulative stage. The first part of this book—Civil Service: Its Functions and Procedures—is intended as a "primer" of civil service history and practice. The second part—Where Social Work and Merit Systems Meet—deals with that specific aspect of civil service which is concerned with public welfare.

Crime

Uniform Crime Reports for the United States and Its Possessions.—Federal Bureau of Investigation, United States Dept. of Justice, Washington, D. C. Apply to Government Printing Office, Washington, D. C. 1940. 68 *pp. Free.*

Line up all the criminal offenders in the United States and possessions, who were known to the police during the last ten years, then sort them according to type of offense, locality, sex, age, race, those with previous fingerprint records or convictions—and you have the picture presented by this summary bulletin, made graphic with numerous picture charts, tables, etc.

Citizens and Government

Government, The Citizens' Business.—School of Commerce, Accounts and Finance, University of Denver, Denver, Colo. 1940. xviii + 624 *pp.* $3.00.

Last June, industrial and professional leaders—nuclei of responsible public interest—met with government experts at Estes Park, to discuss governmental problems. This Citizens' Conference on Government Management—the proceedings of which are contained in this publication—was conducted by the Department of Government Management of the University of Denver, which has as one of its two main aims to increase citizen interest in, and knowledge of, the processes of government. Six main topics served as subjects of talks and discussion: Government Income and Outgo; Financial Management and Control; Organizing Government for Effective Administration; Government in Social Security and Relief; Citizens' Groups in Government; Government and the Consumer. The problems of city government occupied a large part of the discussion.

Research

Governmental Research and Citizen Control of Government, Proceedings of the Conference held at Princeton, N. J., in September, 1939.—Governmental Research Association, 5135 Cass Ave., Detroit, Mich. 1940. 168 *pp.*

One of the principal concerns of this conference was a redefinition of the objectives of the governmental research movement and of research agencies, with emphasis on citizen support and interest. The proposal for the establishment of the American Society for Public Administration, organized in December, 1939, was made at this meeting. Other of the stimulating talks center around: New and Old Instruments of Citizen Control; Developments in Public Administration; The Standardization Movement; Attitude of Bureaus of Research Toward Government.

Legal Opinions

Opinion Bulletin.—National Institute of Municipal Law Officers, 730 Jackson Place, Washington, D. C. 1940. 17 *pp.* $1.00.

Typical opinions prepared by the Institute in response to inquiries from law officers in member cities are here published for general distribution because of their general applicability and widespread interest. They have to do with automobile trailer camps, automobiles (impounding), barber shops, dry cleaners, franchises, open-air parking lots, picketing, public porters, salary—back pay, smoke, taxes, WPA, stairways.

Housing Conference

Broadening the Base of Public Housing.—National Public Housing Conference, 122 E. 22d St., New York. 1940. 35 *pp.* 25c.

Contained in this publication are the addresses delivered at the Ninth Annual Meeting of the National Public Housing Conference, in Washington, in January. Given by key housers, they present a picture of essential housing needs, problems and trends today. Five principal topics were the subjects of the five sessions: Planning and Executing Projects in Public Housing; Loans for Public-Cooperative Housing Projects; More Houses and More Federal Subsidies Needed; State and Local Loans and Subsidies for Housing; Rehousing Rural Workers—Industrial and Agricultural.

Traffic Safety

Braking Distances on Wet Roadway Surfaces—Speed and the Coefficient of Friction.—Safety & Traffic Engineering Department, American Automobile Association, Washington, D. C. 1940. 6 *pp.*

Results of towing tests made by Prof. R. A. Moyer at Iowa State College, and described in this bulletin, indicate that on wet surfaces, braking distances do not vary as the square of the speed, but as the speed raised to the 7/5 power, and that if this is true, tables of braking distances for wet surfaces give distances which are too low for the higher speeds, and consequently tend to minimize the dangers at these speeds.

THE YOUNGSTOWN DAILY
Trumbull to Install Modern System in Auditor's Office
Addressograph to Supplant Antiquated Method—Makes Easy Task for Tax Duplicates
COUNTY ADOPTS NEW SYSTEM ON TAX DUPLICATE
Spends $33,155 for Machines to Speed Treasurers' Work
BUFFALO COURIER
Machine Does Tedious Task For Township
MUNICIPAL MANAGEMENT MAKES NEWS
THE COLUMBUS
BY MACHINERY
Automatic Device Is Designed To Modernize Account-
New Tax Billing System Installed
COUNTY EFFICIENCY

The press is guided by one thing in deciding what to print—what do the people want to read?

Improvements in municipal management make the news because the readers are vitally interested in such matters. They take personal pride in the alertness reflected in the adoption of modern methods by their municipal officers.

This keen public interest offers municipal management an opportunity to build and hold good will by sponsoring methods which provide the utmost in public service. That is why more and more municipal officers are investigating Addressograph.

Addressograph Methods simplify and co-ordinate important municipal office routine. They eliminate errors, omissions, misspelling and illegibility on bills, receipts and other forms. They end waste motion which causes irritating delays. They remove the hazards of errors that cause inconvenience or defeat the collection of revenue.

Get the complete story of these methods and how they are being used by other municipalities. Contact your nearest ADDRESSOGRAPH SALES AGENCY or mail the coupon.

EVERY MUNICIPALITY CAN BENEFIT WITH ADDRESSOGRAPH METHODS FOR HANDLING

Tax Rolls • Assessment Records • Voters' Lists • Licenses • Utility Bills • Inventory Records • Payroll Forms • Relief Lists and Orders • Street Department Records Police Notices • Bulletins

Addressograph is a trade-mark registered in the United States Patent Office

ADDRESSOGRAPH-MULTIGRAPH CORPORATION, *Cleveland, Ohio*

ADDRESSOGRAPH-MULTIGRAPH OF CANADA, LTD., TORONTO

Sales Agencies in Principal Cities

MAIL COUPON TODAY AC-8

Addressograph-Multigraph Corporation
Euclid Post Office, Cleveland, Ohio
Please send me complete story of Addressograph Methods.

Name ..... Municipality .....

Address ..... City ..... State .....

Suburban Slum

Be It Ever So Tumbled—The Story of a Suburban Slum.—By Marvel Daines. Citizens' Housing and Planning Council of Detroit, 1719 Penobscot Bldg., Detroit, Mich. 1940. *52 pp.*

This study is unusual in that it considers the shacktown type of slum on the edge of a city rather than the congested tenement city slum, and also that it presents not only factual statistical data but a descriptive interpretation of the human side of this Negro section. Statistics are given about condition of buildings, occupants, property valuations, tax delinquency, rentals and income. "The Human Side" of the story gives typical case histories of individual families and persons, and answers such questions as why the neighborhood grew up, whether these people pay their bills, whether they make the best of what they have. A final section suggests what should be done with the area.

City Manager Government

Published to date are nine of the case studies of city manager government in individual cities of the United States, by Harold A. Stone, Don K. Price and Kathryn H. Stone, and obtainable from the Public Administration Service, 1313 E. 60th St., Chicago, Ill. They are: City Manager Government in San Diego, Calif. (50c); in Janeville, Wis. (50c); in Charlotte, N. C. (50c); in Fredericksburg, Va. (30c); Lynchburg, Va. (50c); Austin, Texas (60c); Dallas, Texas (60c); Kingsport, Tenn. (25c); Jackson, Mich. (50c).

In the process of publication are studies of city management in: Berkeley, Calif.; Dayton, Ohio; Long Beach, Calif.; Winnetka, Ill.; Rochester, N. Y.; and Hamilton, Ohio.

Fireworks

Regulation of Fireworks, Research Report No. 1.—Prepared by Carl N. Everstine, Research Division, Maryland Legislative Council, City Hall, Baltimore, Md. 1940. *57 pp.*

Are all fireworks always dangerous? Or are they simply misused? How much would their regulation or prohibition affect the fireworks industry in Maryland? These are the questions that are answered in this factual report of fireworks casualties in Maryland; of existing and proposed fireworks legislation in the state; of national regulation; of legislation and its effectiveness in other states; of the fireworks industry in Maryland.

Crime Control Legislation

Crime Control—State Laws, 1935-1938, Inclusive. State Law Index, The Library of Congress, Washington, D. C. Apply to Supt. of Documents, Washington, D. C. 1940. *77 pp.* 10c.

Cooperation and coordination have been the keynote of the trend in crime-control legislation in recent years—cooperation between state and Federal government and between states, coordination within the state and with the locality. This trend and other developments are pointed out in this descriptive history of legislation passed from 1935 to 1938, in the different states. Laws are noted and discussed which apply to state enforcement agencies and functions; crime prevention; beginnings in procedural reform; prisons and the prisoner. One section gives an account of the various phases of legislation having to do with local enforcement.

Massachusetts Taxation

The Problem of Taxation in Massachusetts.—Massachusetts State College, Amherst, Mass. Edited by Charles J. Rohr, Assistant Professor of Political Economy. 1939. *74 pp.* 25c.

Four years ago, the Massachusetts State College, supported by the Commonwealth, held its first conference on Current Governmental Problems, for the purpose of making it possible for the average citizen and the government official to sit down together for a discussion of common problems. This publication contains the papers presented at the fourth of these conferences, held in November, 1939, and covering the various phases of taxation in Massachusetts.

Dutch Housing and Planning

The Dutch.—By A. J. Barnouw. Columbia University Press, New York. 1940. *xii + 297 pp.* $3.00 *from* THE AMERICAN CITY.

This "portrait study of the people of Holland"—which is an informal, well-seasoned description of all aspects of Dutch life, from politics, religion, and language, to the Dutch psychology—contains chapters on housing, city planning and municipal government in that country. It describes the introduction of sewerage and water-works systems in the city of Amsterdam, the founding of cooperative housing societies and the clearing of the slums, architectural control in the city, and the planting of a forest belt around it.

New York Housing

Report of the State Superintendent of Housing to the Governor and the Legislature of the State of New York.—By Edward Weinfeld, State Superintendent of Housing, Division of Housing, Albany, N. Y. 1940. *38 pp.*

This illustrated report is of special interest this year because of the increased importance and responsibilities of the Division of Housing, which resulted in the enactment last year of the state Public Housing Law, making available $150,000,000 for low-rent housing projects in New York State. An explanation of the law and the resulting new housing setup in the state, an analysis of the need for housing and a summary of what has been accomplished under the law, are outlined in the report, which also discusses limited-dividend housing in the state and gives a resumé of recent court decisions relative to housing projects. Summary tables contain data on individual projects.

Architectural Control

Architectural Control Near Public Property.—In the February, 1940, *issue of* Civic Affairs, *published by The Civic Affairs Council, School of Government and the Department of Political Science, The University of Southern California, Los Angeles. 4 pp.*

Is esthetic consideration a matter of public welfare, and can it therefore come under municipal regulation? The answer to this question seems to be slowly changing. This article describes control of architecture and advertising structures which are located near civic centers, government buildings, public parks, etc., as it is exercised in St. Louis, San Diego, Washington, D. C., Philadelphia, and to a certain extent in San Mateo County, Calif., and Los Angeles. It summarizes also court decisions in this country and abroad which are based on esthetic considerations.

City Planning in Hawaii

Existing Urban Resources and Facilities of the Territory of Hawaii.—Territorial Planning Board, Honolulu, Hawaii. 1939. *100 pp.*

One phase of the basic inventorial research of existing resources and facilities of Hawaii, this Supplement to the First Progress Report of the Territorial Planning Board consists almost entirely of maps of Honolulu and the other cities of Hawaii and surrounding islands, which show symbolically physical, social, economic and industrial resources and facilities in these cities. For example, physiography, land use, recreational facilities, public works and public utilities are pictured for each city.

Serving on the Hawaii Territorial Planning Board are the following: Charles D. Rosecrans, Chairman; Louis S. Cain, Frank H. Locey, Karl A. Sinclair, Chester K. Wentworth, Hart Wood, Sr., Robert M. Belt, Harry A. Baldwin, Victor B. Harrel.

Safety

Safety for Your Safety Community.—Department of Highways, State of Ohio, Columbus, Ohio. 1940. *51 pp.*

A handbook outlining briefly, and in popular style, suggestions for the organization of a community safety program. Besides a discussion of the three E's—Engineering, Enforcement, Education—it includes short chapters on organization and accident records, and a list of references.

Voting Study

Voting Behavior: A Case Study.—By James Kerr Pollock. Bureau of Government, University of Michigan, Ann Arbor, Mich. 1939. *40 pp.* 25c.

Less than 17 per cent of the residents of Ann Arbor, a city in democratic America, make its political decisions, control its affairs. The percentage of voters among the foreign-born population of this city is greater than that of the native-born. These are among other interesting conclusions arrived at in this report, which not only describes various aspects of voting behavior, but is valuable as an example of the statistical method applied to the study of political phenomena. Electoral response in Ann Arbor is analyzed, over an 8-year period, by wards, by sex, age, nationality, faculty status.

Property Tax Effects

The Property Tax—and Its Consequences in Buffalo and Erie County.—Committee on Taxation, Chamber of Commerce, Buffalo, N. Y. 1940. *45 pp.*

Although offering no solution to the property tax problem in Buffalo and Erie County, this report presents facts intended to serve as a basis for an attack on that problem. It answers such questions as whether the property tax is responsible for destruction of real estate values, demolition of structures, sacrifice of homes, industries moving from the city. It compares Buffalo to other similar cities, and analyzes the real estate situation, the economic status of taxpayers, and the cost of government. Alternate possibilities to the property tax are considered.

Civil Service

Personnel Manual.—City of Saginaw, Mich. Apply to Byron J. Rockwood, Personnel Officer. 1940. *35 pp.* 60c.

Saginaw is one of the Michigan cities in which a demonstration personnel program was installed with the aid of the Civil Service Assembly of the United States and Canada, the Public Administration Service, and the Michigan Municipal League. These circumstances lend particular interest to this personnel manual—a working guide for the officers and employees of the city, containing the rules and regulations, policies and procedures for operating the program. Topics covered: charter provisions and the responsibility for administration; classification; compensation; recruitment; in-service activities; penalties and terminations; records; forms, reports, handling of suggestions and complaints.

Other Reports Received

ATLANTA, GA.—Your City—Atlanta, in Preview and Retrospect, a Report from the President of the Atlanta Chamber of Commerce. 8-page folder.

BANGOR, MAINE.—Municipal Activities, annual report, 1939. 48 pp.

ERIE, PA.—Annual Report, Department of Accounts and Finance, 1939. 74 pp.
Budget for 1940—Where the Tax Dollar Goes. 59 pp.

FREDERICKSBURG, VA.—Annual Report, 1939. 67 pp.

HENNEPIN COUUNTY, MINN.—Financial Statement, 1939. 50 pp.

LARCHMONT, N. Y.—Annual Report, 1939. 20 pp.

LOS ANGELES, CALIF.—Annual Report, Board of Public Works. 148 pp.

MCPHERSON, KANS.—Annual Report, 1939. 44 pp.

MINNEAPOLIS, MINN.—"Action."—Minneapolis Civic Council, 610 Knight Bldg. 15 pp.

NEW HAVEN, CONN.—"Library Classification and Sample Bibliography of Traffic Engineering Materials."—By Leslie Williams, Research Assistant, Bureau for Street Traffic Research, Yale University, New Haven, Conn. 58 pp.

RHINELANDER, WIS.—Annual Report, 1939. 17 pp.

RIVERHEAD, LONG ISLAND, N. Y.—Report of the Suffolk County Mosquito Extermination Commission. 11 pp.

LET "Samson" HELP KEEP YOUR CITY Clean

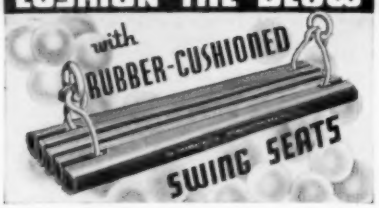
Specify THE NEW Steelcrete Expanded Metal

RUBBISH BASKET

Made of expanded metal, the "Samson" Rubbish Basket is well equipped to give long, economical service in your city streets, parks, zoos and in other places where waste containers are needed. Specifications and prices upon request. *"It's Wheeling Steel"*

THE CONSOLIDATED EXPANDED METAL COMPANIES
WHEELING, WEST VIRGINIA
Branch Offices and Warehouses: New York • Chicago • Cleveland • Pittsburgh Philadelphia • Detroit • Boston • Buffalo • Houston • Atlanta
Export Office: 330 West 42nd St., New York, N. Y.

CUSHION THE BLOW with RUBBER-CUSHIONED SWING SEATS



Re-equip old swing outfits with

EverWear

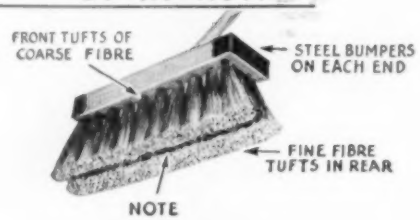
The ONLY Swing Seat Which Really Absorbs the Blow and Protects the Child

Reduce playground accidents with EverWear Safety Swing Seats. Tubular rubber, resilient as balloons, surrounds spring steel core . . . absorbs shocks, blows, prevents cuts. New illustrated CATALOG No. 32 Sent FREE. Mail this ad and check equipment that interests you. Address Dept. A.

THE EVERWEAR Manufacturing Company
Dept. A Springfield, Ohio

Manufacturers of ★ EverWear Playground Apparatus ★ Economy Playground Apparatus ★ EverWear Swimming Pool Equipment ★ EverWear Basket Ball Backstops

The № 97 HI-WAY



First Real Improvement in Street-Gutter Brooms Since "Horse-and-Buggy Days"!

Sweeps dust and heavy particles at the same operation.

Saves back-action. This new street broom is guaranteed to give you 53 miles of sweeping.

THE JOSEPH LAY CO., INC.
SINCE 1876
PORTLAND INDIANA

CUT MAINTENANCE COSTS 75%

Concrete slab maintenance costs can be reduced as much as 75% by the Koehring Mud-Jack Method. The Koehring Mud-Jack raises sunken concrete . . . walks, curb and gutter, driveways, streets, highways, etc., eliminating reconstruction costs. Write for the new Mud-Jack Bulletin illustrating applications and describing the Mud-Jack Method.

KOEHRING HEAVY DUTY

KOEHRING COMPANY
MILWAUKEE • WISCONSIN

MUD-JACK METHOD

Conventions - - When and Where

Meeting is annual convention unless otherwise designated

MAY 13-14.—COLUMBIA, MO.
Missouri Association of Municipal Utilities. (Tiger Hotel.) Sec.-Treas., W. J. McCarroll, Fulton, Mo.

MAY 16-18.—JACKSONVILLE, FLA.
American Water Works Association—Florida Section. (Seminole Hotel.) Sec., A. P. Black, Univ. of Florida, Gainesville.

MAY 16-17.—SALISBURY, MD.
Maryland-Delaware Water and Sewerage Association. (Wicomico Hotel.) Sec., A. W. Blohm, 2411 N. Charles St., Baltimore, Maryland.

MAY 19-22.—PITTSBURGH, PA.
Pennsylvania State Association of Township Commissioners. (William Penn Hotel.) Sec.-Treas., H. A. Fritschman, Upper Darby, Pennsylvania.

MAY 20-21.—CATALINA ISLAND, CALIF.
California Sewage Works Association. Spring conference. Sec., Fred D. Bowlus, 202 Law Bldg., Los Angeles, Calif.

MAY 22-24.—CHICAGO, ILL.
American Water Works Association—Illinois Section. (Congress Hotel.) Sec., H. E. Hudson, Jr., 6843 Oglesby Ave., Chicago, Ill.

MAY 22.—TRENTON, N. J.
American Water Works Association—New Jersey Section. Spring meeting. (Stacey-Trent Hotel.) Sec.-Treas., C. B. Tygert, Box 178, Newark, N. J.

MAY 23-24.—EVERETT, WASH.
Association of Washington Cities. (Monte Cristo Hotel.) Exec. Sec., Chester Biesen, Univ. of Washington, Seattle, Wash.

MAY 23-24.—DETROIT, MICH.
Community Chests and Councils, Inc. (Book-Cadillac Hotel.) Exec. Vice-Pres., Allen T. Burns, 155 E. 44th St., New York City.

MAY 23-24.—SEASIDE, ORE.
League of Oregon Cities. (Hotel Seaside.) Sec., Herman Kehrli, Univ. of Oregon, Eugene, Ore.

MAY 23-24.—PITTSBURGH, PA.
Pennsylvania Association of Planning Commissioners. (Roosevelt Hotel.) Sec., Arthur A. Cassell, City Hall, Allentown, Pa.

MAY 27-28.—JOPLIN, MO.
Joint meeting. (Connor Hotel.) *Missouri Association of Mayors and Other Municipal Officials and Missouri Municipal Association.* Exec. Sec., George A. Spencer, 412 Guitar Bldg., Columbia, Mo.

JUNE 3-6.—ST. LOUIS, MO.
Building Officials' Conference of America. (Hotel Jefferson.) Address: Sec.-Treas., William F. Hurd, Commissioner of Bldgs., Indianapolis, Ind.

JUNE 6-7.—ITHACA, N. Y.
American Water Works Association—New York Section. (Hotel Ithaca.) Sec., R. K. Blanchard, 50 W. 50th St., New York.

JUNE 6-8.—WILMINGTON, DEL.
Eastern Association of Fire Chiefs. (Hotel Du Pont.) Sec., Charles E. Clark, Box 217, Wayne, Pa.

JUNE 10-12.—ROCHESTER, N. Y.
Conference of Mayors and Other Municipal Officials of the State of New York. Exec. Sec., William P. Capes, City Hall, Albany, N. Y.

JUNE 13-14.—MONTROSE, COLO.
Colorado Municipal League. Sec.-Treas., Don C. Sowers, Univ. of Colorado, Boulder, Colorado.

JUNE 17-19.—TWO HARBORS, MINN.
League of Minnesota Municipalities. (High School Bldg.) Exec. Sec., C. C. Ludwig, Univ. of Minnesota, Minneapolis, Minn.

JUNE 17-19.—DETROIT, MICH.
Municipal Finance Officers' Association of the United States and Canada. (Hotel Statler.) Exec. Dir., Carl H. Chatters, 1313 E. 60th St., Chicago, Ill.

JUNE 20-22.—SYRACUSE, N. Y.
New York State Sewage Works. (Hotel Syracuse.) Sec.-Treas., A. S. Bedell, State Dept. of Health, Albany, N. Y.

JUNE 24-27.—ST. JOSEPH, MICH.
Michigan Association of Chiefs of Police. (Hotel Whitcomb.) Address: Sec.-Treas., Oscar G. Olander, City Comr., E. Lansing, Mich.

JUNE 24-26.—PASADENA, CALIF.
National Institute of Municipal Law Officers. Midyear meeting. (Hotel Huntington.) Exec. Dir., John A. McIntire, 730 Jackson Place, N. W., Washington, D. C.

JUNE 24-26.—STATE COLLEGE, PA.
Pennsylvania State Association of Boroughs. (Nittany Lion Hotel.) Pres., Thomas F. Chrostwaite, Hanover, Pa.

JUNE 24-28.—STATE COLLEGE, PA.
Pennsylvania Water Works Operators' Association. Sec.-Treas., I. M. Glace, 22 S. 22d St., Harrisburg, Pa.

JUNE 25-27.—DIXVILLE NOTCH, N. H.
New England Association of Fire Chiefs. (Balsams Hotel.) Sec., John W. O'Hearn, Watertown, Mass.

JUNE 26-28.—STATE COLLEGE, PA.
Pennsylvania Sewage Works Association. (State College Campus and Nittany Lion Hotel.) Sec., L. D. Matter, Kirby Health Center, Wilkes-Barre, Pa.

JUNE 30-JULY 4.—MILWAUKEE, WIS.
National Education Association of the United States. Exec. Sec., Willard E. Givens, 1201 16th St., N. W., Washington, D. C.

JULY 8-12.—SAN FRANCISCO, CALIF.
National Conference on Planning. (Fairmont Hotel.) Joint annual conference of American Society of Planning Officials, American Institute of Planners, the American Planning and Civic Association, and the National Economic and Social Planning Association. Conference Dir., Walter H. Blucher, 1313 E. 60th St., Chicago, Ill.

JULY 23-25.—NEW YORK CITY.
New York State Association of Chiefs of Police. (Hotel Astor.) Sec.-Treas., R. W. Morris, P. O. Box 346, Geneva, N. Y.

JULY 23-25.—WILLIAMSPORT, PA.
Pennsylvania Chiefs of Police Association. (Lycoming Hotel.) Sec., F. B. Titus, Lansdowne, Pa.

AUGUST 5-8.—SPOKANE, WASH.
International Association of Fire Chiefs. (Davenport Hotel.) Sec., James J. Mulcahey, 16 Franklin Ave., Yonkers, N. Y.

AUGUST 18-24.—EVANSTON, ILL.
National Institute for Commercial and Trade Organization Executives. (Northwestern Univ.) Sec., C. R. Miles, 832 First Nat'l Bank Bldg., Chicago, Ill.

AUGUST 22-24.—LOGAN CITY, UTAH.
State Municipal League of Utah. (Eccles Hotel.) Sec., Tom McCoy, Public Safety Bldg., Salt Lake City, Utah.

AUGUST 27-30.—DETROIT, MICH.
National Shade Tree Conference. (Book-Cadillac Hotel.) Sec.-Treas., L. C. Chadwick, Ohio State University, Columbus, Ohio.

SEPTEMBER 5-6.—PIERRE, S. DAK.
League of South Dakota Municipalities. (St. Charles Hotel.) Sec., A. E. Mead, Univ. of South Dakota, Vermilion, S. Dak.

SEPTEMBER 9-12.—SPRING LAKE, N. J.
Illuminating Engineering Society. (Essex and Sussex Hotel.) Gen. Sec., A. D. Cameron, 51 Madison Ave., New York.

SEPTEMBER 9-12.—MILWAUKEE, WIS.
International Association of Chiefs of Police. (Hotel Schroeder.) Exec. Vice-Pres., William P. Rutledge, 1313 E. 60th St., Chicago, Ill.

SEPTEMBER 9-12.—BALTIMORE, MD.
National Association of Assessing Officers. (Lord Baltimore Hotel.) Exec. Dir., Albert W. Noonan, 1313 E. 60th St., Chicago, Ill.

SEPTEMBER 11-13.—ANN ARBOR, MICH.
American Water Works Association—Michigan Section. (Michigan Union.) Sec., M. N. Gerardy, Water Board Bldg., Detroit, Mich.

SEPTEMBER 16-17.—DENVER, COLO.
American Water Works Association—Rocky Mountain Section. Sec., B. V. Howe, State Office Bldg., Denver, Colo.

SEPTEMBER 16-19.—SAN DIEGO, CALIF.
League of California Cities. Sec., Richard Graves, 2121 Allston Way, Berkeley, Calif.

SEPTEMBER 18-20.—NEW CASTLE, PA.
American Water Works Association—Western Pennsylvania Section. (Castleton Hotel.) Sec., E. P. Johnson, 418 Flannery Bldg., Pittsburgh, Pa.

SEPTEMBER 18-20.—ROCK ISLAND, ILL.
Illinois Municipal League. (Fort Armstrong Hotel.) Exec. Dir., A. D. McLarty, 500 E. Capitol Ave., Springfield, Ill.

SEPTEMBER 22-24.—ROANOKE, VA.
League of Virginia Municipalities. (Hotel Roanoke.) Exec. Sec., Morton L. Wallerstein, 902 Travelers Bldg., Richmond, Va.

SEPTEMBER 23-26.—COLORADO SPRINGS, COLO.
International City Managers' Association. (Broadmoor Hotel.) Exec. Dir., Clarence E. Ridley, 1313 E. 60th St., Chicago, Ill.

SEPTEMBER 23, WEEK OF.—FRANKFORT, KY.
Kentucky Municipal League. (New Capital Hotel.) Exec. Sec., Carl B. Wachs, Univ. of Kentucky, Lexington, Ky.

SEPTEMBER 24-27.—CLEVELAND, OHIO.
American Institute of Park Executives and the American Park Society. (Hotel Statler.) Exec. Sec., Will O. Doolittle, Tulsa, Okla.

SEPTEMBER 24-27.—NEW YORK CITY.
New England Water Works Association. (Hotel Commodore.) Sec., Frank J. Gifford, 613 Statler Bldg., Boston, Mass.

SEPTEMBER 30-OCTOBER 2.—DETROIT, MICH.
American Public Works Association. Exec. Dir., Frank W. Herring, 1313 E. 60th St., Chicago, Ill.

SEPTEMBER 30-OCTOBER 4.—CLEVELAND, OHIO.
National Recreation Association. (Hotel Statler.) Sec., Howard S. Braucher, 315 Fourth Ave., New York.

OCTOBER 1-2.—COLUMBUS, OHIO.
Ohio Conference on Sewage Treatment. (Neil House.) Sec., B. M. McDill, Dept. of Health, Columbus, Ohio.

OCTOBER 7-11.—CHICAGO, ILL.
National Safety Council. (Stevens Hotel.) M'ng Dir., W. H. Cameron, 20 N. Wacker Drive, Chicago, Ill.

OCTOBER 8-11.—DETROIT, MICH.
American Public Health Association. (Book-Cadillac Hotel.) Exec. Sec., Dr. Reginald M. Atwater, 50 W. 50th St., New York.

OCTOBER 8-10.—SCOTTSBLUFF, NEBR. (Tentative.)
League of Nebraska Municipalities. (Hotel Lincoln.) Sec.-Treas., C. E. Beals, 204 Brownell Bldg., Lincoln, Nebr.

OCTOBER 14-17.—TULSA, OKLA.
American Water Works Association—Southwest Section. (Mayo Hotel.) Sec., Lewis A. Quigley, 3320 W. Berry St., Fort Worth, Texas.

OCTOBER 14-17.—JACKSONVILLE, FLA.
International Municipal Signal Association, Inc. (George Washington Hotel.) Sec., Irvin Shulsinger, 8 E. 41st St., New York.

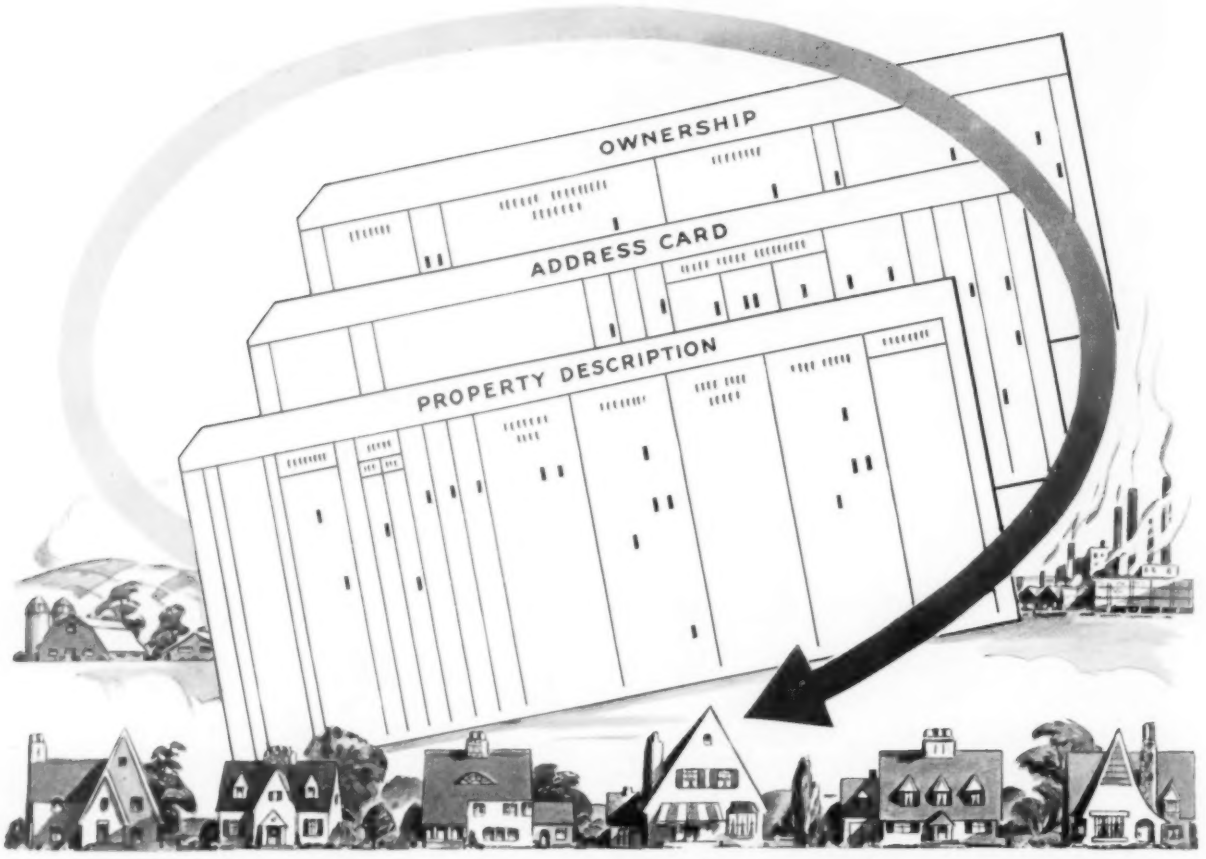
OCTOBER 14-18.—DETROIT, MICH.
National Association of Public School Business Officials. (Book-Cadillac Hotel.) Sec., H. W. Cramblet, Board of Education, Pittsburgh, Pa.

OCTOBER 18-19.—ATLANTIC CITY, N. J.
American Water Works Association—New Jersey Section. Fall meeting. (Madison Hotel.) Sec.-Treas., C. B. Tygert, Box 178, Newark, N. J.

OCTOBER 21.—BLUEFIELD, W. VA.
League of West Virginia Municipalities. Exec. Sec., Hume K. Nowlan, Hinton, W. Va.

OCTOBER 23-25.—LEXINGTON, KY.
American Water Works Association—Kentucky-Tennessee Section. (Lafayette Hotel.) Sec.-Treas., Howard D. Schmidt, 420 6th Ave., N., Nashville, Tenn.

OCTOBER 23-26.—LOS ANGELES, CALIF.
American Water Works Assiciation—California Section. (Biltmore Hotel.) Sec., Burton S. Grant, Box 240, Arcade Annex, Los Angeles.



For Accuracy and Maximum Speed in REAL PROPERTY TAX ACCOUNTING

From a permanent file of punched cards for all real property, International Electric Accounting Machines automatically prepare

Assessment Rolls
Computation of Tax Extensions
Tax Rolls
Tax Bills
Collection Registers
Account Ledgers
Tax Sale Advertising Lists
Tax Certificates
Redemption Registers
Delinquency Control Records
Special Studies

Investigate the accuracy and speed of this modern method and find out why it can save money for your city. Call your nearest International Business Machines representative for complete information today.

SEE THE CONTEMPORARY ART OF THE UNITED STATES

. . . two unusual exhibits, in the International Business Machines Corporation's Galleries of Science and Art, at the World's Fair of 1940 in New York and the Golden Gate International Exposition

INTERNATIONAL BUSINESS MACHINES CORPORATION

World Headquarters Building
590 MADISON AVENUE, NEW YORK, N. Y.

Branch Offices
IN PRINCIPAL CITIES OF THE WORLD

When you write for that catalog, kindly mention THE AMERICAN CITY.

News and Illustrations

Items of Interest to City, Town and County Officials, and Others Concerned with the Economical Construction and Efficient Operation of Public Improvement Undertakings

Corrough Made Manager of Alco Products Div.

Hugh M. Corrough, who has been with the Alco Products Division of American Locomotive Co., New York City, since June, 1936, and has served in the capacities of Chief Mechanical Engineer, Assistant Manager of Engineering, and Manager-Engineering, has been appointed Manager of the Alco Products Division.

Since attending Iowa State College he has held various refinery operating assignments with the Empire Oil & Refining Co. at Ponca City and Okmulgee, Okla., until 1928, when he was transferred to the company's general office in Tulsa in charge of refinery construction design and maintenance. In 1934 he moved to the Cities Service Oil Company's executive offices in New York City.

An Automatic High-Speed Whiteprint Machine

A new automatic high-speed Whiteprint machine which produces white prints up to 20 linear feet per minute has been announced by the Ozalid Corporation, Johnson City, N. Y. The Ozalid Model A machine employs a new quartz envelope high-pressure mercury vapor lamp, which is guaranteed for 1,000 hours. This model is available in two sizes for production of prints up to and including 42- and 54-inch widths. An ingenious device automatically separates the print from the original after exposure. The original is returned to the operator in front of the machine, while the exposed print is automatically conveyed to the developing unit, where, after dry development, it is discharged at the rear of the machine ready for immediate use.

The Model A Ozalid Whiteprint Machine

The intensity of the light from the high-pressure mercury vapor lamp may be varied from full brilliancy to 60 per cent of light without loss of energy. This dimming arrangement is important, because it allows the operator to select the desired intensity and permits continuous and uniform production of prints despite variations in tracings. The mercury vapor lamp is cooled by an alternating air blast. This positive printing and dry developing machine is contained in a streamlined case.

G. F. Doughty, N. Y. Mgr. of Simplex Wire & Cable

G. F. Doughty has been appointed Manager of the New York sales office of Simplex Wire & Cable Co., Cambridge, Mass. He is a native of Stamford, Conn., and he holds degrees from Stevens Institute of Technology and Columbia University Graduate School of Business. Mr. Doughty has been continuously associated with the New York sales office of the Simplex Co. for the past 17 years. Previous to that time he was in the Electrical Engineering Department of the Brooklyn Edison Co.

Heavy Turbine Orders for General Electric

C. S. Coggeshall, Manager of the General Electric Co., Turbine Division, reports that turbine-generators ordered from General Electric for United States utility and municipal power plants since January 1, 1939, in ratings of 10,000 kw and higher, exceeded the 1,000,000-kw mark in the 14 months ending February 29, 1940. This 14-months business equals the total of domestic utility and municipal turbine orders placed with the company during 1937 and 1938, and is within approximately 200,000 kw of the machines ordered in 1929 in ratings of 10,000 kw and higher.

A New Hand Broom for Street Sweepers

A new gutter broom, designated the No. 97 Hi-way, has been announced by the Joseph Lay Co., Inc., Portland, Ind. The broom is built with a long handle, and steel bumpers on each end of the block in which the tufts of fiber are set, and the fiber itself is divided into two sections—a front section of coarse fiber and a rear section of fine fiber, with the rear section tufts one inch longer than those in front.

This broom is designed to sweep dust and heavy particles in the same operation and is guaranteed for 53 miles of sweeping distance.

The Holland No. 11 Curb Intake

A Curb Inlet That Is Self-Cleaning

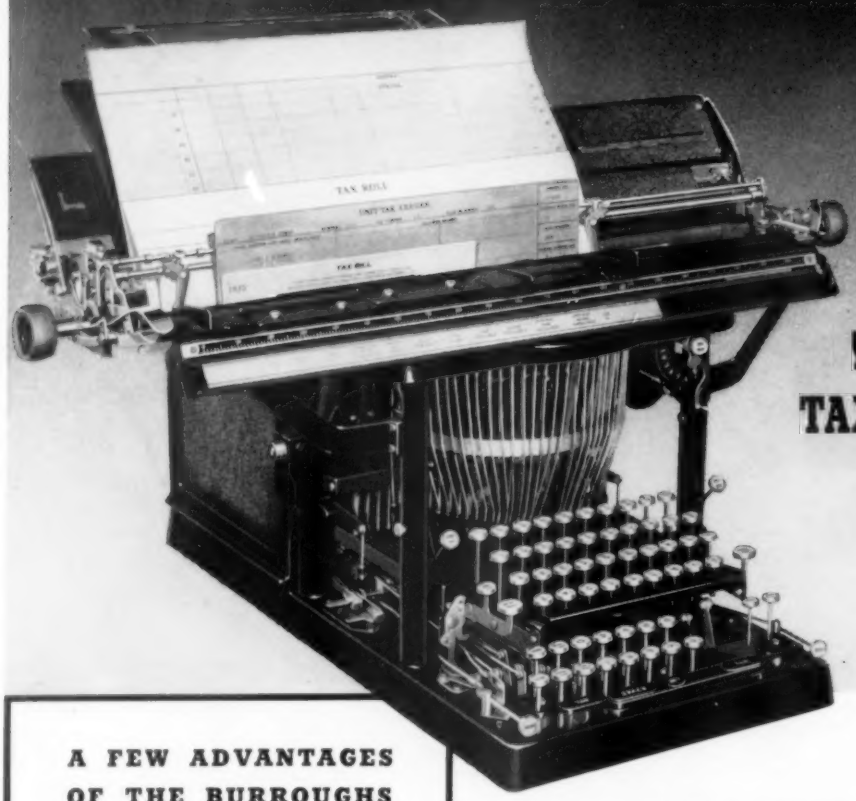
A new self-cleaning sanitary curb intake, which has been used on several highways recently rebuilt in Cuyahoga County and Cleveland, Ohio, is shown in the accompanying illustration. This intake, made by Madison Foundry Co., 935 Addison Road, N. E., Cleveland, Ohio, is furnished either right- or left-hand as the location may require, and with as many grooves as the percentage of grade demands. One of these intakes which was installed at the corner of Chapel and Central Streets, Hot Springs, Ark., took in more water during a cloudburst than a 12-inch pipe could carry away. The character of the casting is simple and is very effective in stopping the flow of water and maintaining the curb inlet in a clean condition, free of deposits of grit and other material.

Airport Consultant for Testing Laboratories

The Haller Engineering Associates, Inc., 11 West 42d Street, New York City, has appointed Emil K. Harvey as Director of its Airport Consulting Division. The Haller company maintains three laboratories and an engineering staff in the eastern states, equipped to test and analyze any material used in airport construction. Since its establishment in 1927 it has served upward of 500 communities and private companies.

Mr. Harvey has been associated with airport design for a considerable period and has been employed by a number of airport companies, acted as airport consultant, and taught for seven years the first course in airport design and construction at the Daniel Guggenheim School of Aeronautics, New York University. He is an associate fellow of the Institute of Aeronautical Sciences and a member of the National Aeronautic Association.

SIMPLIFIED TAX ACCOUNTING BY DIRECT METHODS



with BURROUGHS TAX ACCOUNTING MACHINE

A FEW ADVANTAGES OF THE BURROUGHS SIMPLIFIED TAX ACCOUNTING PLAN

All information on each parcel of property is in one place—any account can be quickly audited, and service to taxpayers is accelerated.

Duplicate bills for collection follow-up can be easily prepared.

Trial balances may be obtained at any time.

Provides an efficient and convenient method of billing annual installments and accrued interest on special assessments.

Furnishes positive control over both current and delinquent charges.

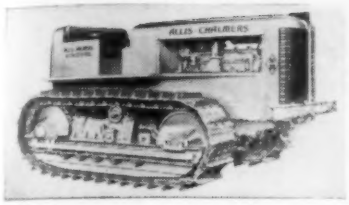
Flexible—readily adaptable to local requirements.

The Burroughs Tax Accounting Machine prepares the Tax Roll, Tax Bill and Tax Ledger *in one operation*—computing the taxes by direct electric multiplication, and accumulating page totals. All three records, including the computations, are completed with fewer key depressions than are required to copy *one record* on an ordinary typewriter! Proper accounting controls are maintained throughout the posting operation.

Ask your local Burroughs office for complete facts about simplified tax accounting by direct methods and Burroughs Tax Accounting Machine. Or, if more convenient, write direct to—

BURROUGHS ADDING MACHINE COMPANY
6751 SECOND AVENUE, DETROIT, MICHIGAN

Burroughs



The New A-C Diesel Tractor

A New Diesel Tractor of 79-Hp at Drawbar

A new diesel crawler tractor, powered with a two-cycle General Motors diesel engine and equipped with bi-metallic steering clutches and brakes, has been announced by the Tractor Division, Allis-Chalmers Mfg. Co., Milwaukee, Wis. The machine is built complete with an extra heavy crankcase, radiator and truck wheel-guards, muffler, hour meter, adjustable radiator shutters, bumper, front pull hook and electric starting and lighting as standard equipment.

The four-cylinder engine of this Model HD-10 tractor provides 95 belt horsepower and 79 drawbar horsepower with drawbar pulls up to 18,430 pounds. The tractor is made in two tread widths of 62 and 74 inches, with the narrow model weighing 19,900 pounds and the wide model weighing 20,700 pounds. Constant-mesh gears permit shifting on the go like a truck with six speeds forward and two reverse. Because the engine can be throttled down to almost half engine speed range is provided from 1.69 to 6.03 mph. This ability to throttle down in any gear reduces gear shifting and lost time.

The HD-10 is designed to handle 2- or 4-wheel scrapers up to 10-yard capacity, 12-foot blade graders, bulldozers, trail builders, winches, and other allied equipment. A folder describing this new diesel tractor may be obtained from the Tractor Division, Allis-Chalmers Mfg. Co., Milwaukee, Wis., by readers mentioning this item.

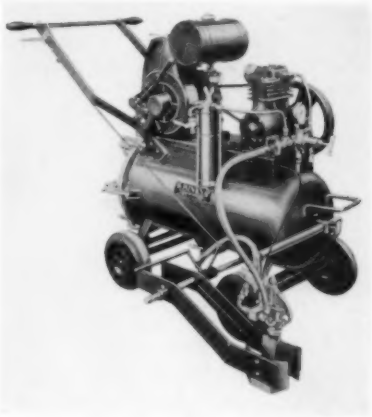
Portable Spray Unit Traffic-Line Marker

The new No. 240 spray line marker, manufactured by the Binks Mfg. Co., 3114-40 Carrol Ave., Chicago, Ill., is a complete self-contained portable unit for marking traffic lines on highways, streets, and airports, and for marking tennis courts. It can be furnished with an auxiliary hand-operated gun for stenciling warning signs, painting fences, park benches, posts, etc.

This unit is equipped with a ¾-hp Briggs and Stratton gasoline engine and four pneumatic tires. The wheels are ball bearing and each wheel has its own springs to compensate for uneven flooring or paving. The Binks twin cylinder piston-type 2⅜ x 2-inch compressor, driven by a V-belt, delivers 3½ cfm at 60 pounds pressure.

One control on the handle operates the special R-1 external atomization pressure feed spray gun, and shields cut off the spray in sharp even lines. These lines can be adjusted from 3 to 6 inches. A pressure tank, equipped with safety valve and all necessary cocks for draining and cleaning, keeps the spray gun supplied with material.

This unit is capable of spraying 1 to 4 miles per hour, depending on the condition of the surface, and is made for one-man operation, the operator having a clear view at all times of the old stripe or the guide-lines laid down.



Self-Contained Portable Spray Unit

Screens, Grit and Sludge Units for Small Plants

A complete line of mechanical equipment designed and built particularly for small sewage-treatment plants has been announced by Chain Belt Co., Milwaukee, Wis. It includes a mechanically cleaned bar screen, grit collecting equipment, and a conveyor sludge collector.

A streamlined, completely housed replica of the large Rex mechanically cleaned bar screen is now available for the small plant. It is built as an integral self-contained unit of simple, rugged design, and is easily installed in new or existing channels with a maximum width of 3 feet and a maximum depth of 5 feet. The screen may or may not be used with the Rex Triturator.

The new Rex grit collector is the conventional unit built for large plants, but on a smaller scale, and is suitable for flows up to about 4 mgd. It is installed in a simple concrete channel with all the machinery above the channel, enclosed in a neat housing. Careful hydraulic design and grit washing by recirculation assure a grit of good quality for easy disposal.

The new Rex conveyor sludge collector has all the features of the standard heavy equipment, but with parts proportionally smaller. The motorized drive units, self-cleaning bearings, pivoted scrapers, steel wearing shoes, and corrosion-resisting chain known in the larger units are all incorporated in the design. A self-propelled automatic skimming device is also available to work in conjunction with the clarifier. Primary or secondary tank collectors can be furnished. The use of this equipment in tanks up to 10 feet width by 50 feet in length is recommended by the manufacturer.

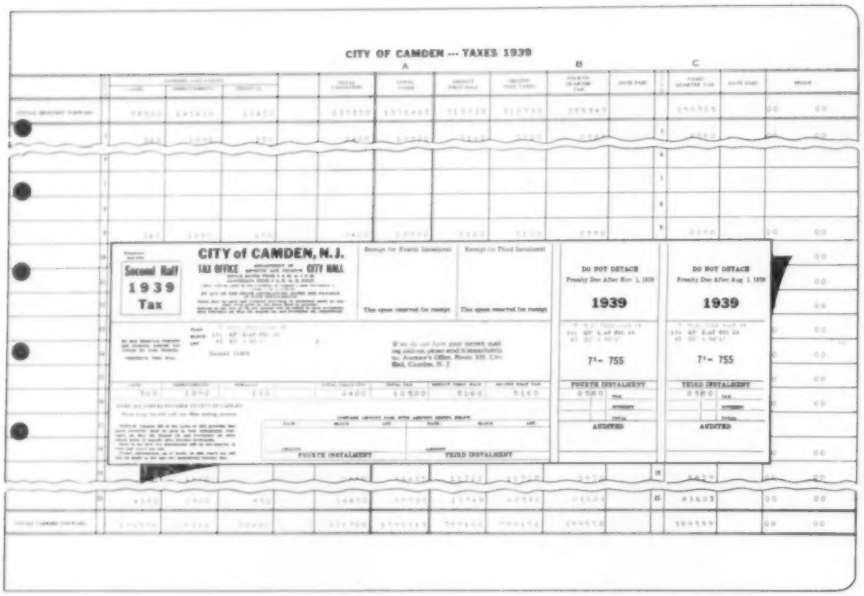
Ambro Agency Moves Cedar Rapids Offices

Ambro Advertising Agency, Inc., Cedar Rapids, Iowa, has moved its offices to 333 Dows Building in Cedar Rapids, where additional facilities and personnel are available to serve the increasing business of its clients. Ambro represents among other manufacturers Link-Belt Speeder Corp. and LaPlant-Choate Mfg. Co.

A Rex Conveyor Sludge Collector in a Small Sewage-Treatment Plant

ONE Machine Does It All!

WATER BILLING — TAX BILLING — BUDGETARY ACCOUNTING



Take Camden —

City Comptroller

S. P. McCord

says —

"We wanted to do all our accounting by machine in the simplest way possible. So we selected Sundstrand Class D machines to do Water Billing — Tax Billing — General Accounting —

This one type of machine does all this AND our regular city employees operate it."

The Machine

SUNDSTRAND CLASS D

ABOVE ARE MODERN MACHINE ACCOUNTING FORMS OF THE CITY OF CAMDEN, N. J.

Accounting Machine Division • UNDERWOOD ELLIOTT FISHER COMPANY
Accounting Machines . . . Typewriters . . . Adding Machines . . . Carbon Paper . . . Ribbons and other Supplies • One Park Avenue, New York, N.Y. • *Sales and Service Everywhere*
Underwood Elliott Fisher *Speeds the World's Business*
Copyright 1939, Underwood Elliott Fisher Company

Underwood

ELLIOTT FISHER ACCOUNTING MACHINES

Many municipalities large and small now use the SUNDSTRAND CLASS D accounting machine for the same reasons given by the City Comptroller of Camden, N. J.

A New Wricoprint Lettering Set

Engineering Lettering Made Uniformly Neat

For more than a decade Wrico lettering guides have been the standard of engineering lettering, making it possible for draftsmen who were not experts in engineering lettering to produce neat lettering on all drawings. The Wood-Regan Instrument Co., Inc., Nutley, N. J., has recently announced the new Wricoprint lettering guide, which is much less expensive than the older type, making it possible for engineering students and all draftsmen to possess their own sets.

The new Wricoprint guides, made also of Pyralin, like the earlier Wrico lettering guides, are made both in standard vertical and standard slant lettering in capital letters and small letters and all numerals and standard engineering and commercial symbols. Each set comes complete with the special Wrico pen, a lettering pad, guides for capitals, small letters, numerals and symbols, a bottle of Wrico pen cleaner and a bottle of Higgins Wrico waterproof India ink. Complete information regarding Wricoprint lettering guides will be sent promptly to those mentioning this item.

Concrete Mixer Catalogs Available to Readers

The Chain Belt Co., Milwaukee, Wis., has issued a series of new catalogs on the 1940 line of Rex concrete mixers, which are available to readers of THE AMERICAN CITY. In writing to the manufacturer for any of these catalogs, please mention specifically the one desired.

Bulletin No. 360 describes the 3½-S mixer, a tilting mixer with a positive handwheel lock, adjustable Timken spindle bearings, a spring lock towing pole and other worth-while features.

Bulletin No. 361 features the Rex 5-S and 7-S mixers, made in either two- or four-wheel, end or side discharge models with light- or heavy-duty engines. They are built with pressed steel drum heads and drum rollers, and the mixing drum has oversize blades and buckets to speed up and better the mixing job.

Bulletin No. 362 describes the 10-S and 14-S mixers, which have all the features of the Rex 5-S and 7-S models, plus additional features including new retractable outriggers and a new adjustable towing pole which can be adjusted to the exact height of the truck hitch.

General Electric Personnel Changes

F. H. Winkley, Manager of the Lighting and Cable Division of the General Electric Co., Schenectady, N. Y., retired from active duty on March 1. On that date two divisions were announced to replace the one of which Mr. Winkley was head. A. F. Dickerson has been appointed Manager of the Lighting Division, and W. V. O'Brien, Manager of the Wire and Cable Division.

Mr. Winkley's retirement concludes a period of 31 years' continuous association with General Electric Co. A. F. Dickerson, the newly appointed Manager of the Lighting Division, became associated with the Illuminating Engineering Laboratory in 1911 and was appointed Manager of the Laboratory and the Lighting Section in 1932.

W. V. O'Brien has been Assistant to Mr. Winkley since December, 1938.

F. D. Crowther and H. E. Mahan have been made managers, respectively, of the Lighting Sales Section and the Illuminating Laboratory Section of the lighting division of the General Electric Co. Mr. Crowther joined GE on the test course at Schenectady soon after his graduation from Oregon State College in 1927, and has been with the company continuously except for a leave of absence of one year when he became engineer of the Outdoor Sports Illuminating Co. Since January, 1939, he has been commercial assistant to the lighting sales manager.

Mr. Mahan entered the General Electric test course in 1910 and became a member of the illuminating laboratory in the same year. He had previously been with the Philadelphia Rapid Transit Co., after graduating from Drexel Institute of Technology in 1909.

Robert S. Peare, President and General Manager of the Maque Co., a large printing and engraving concern affiliated with General Electric in Schenectady, has been named Manager of the Publicity Department.

Chester H. Lang, Manager of Advertising and Sales Promotion activities since 1932, has been named Manager of Apparatus Sales and Vice-Chairman of the General Electric Apparatus Sales Committee.

Meters for Hotplates in City Parks

An outdoor cook stove that pays for itself through the use of a coin meter has been announced by the Welcome Meter Co., 461 South Fair Oaks Avenue, Pasadena, Calif. This electric hotplate will be of interest to parks, playgrounds and recreation officials, for it offers to the out-of-doors public a clean, modern, pay-as-you-use electric cooking device wherever power is available in recreation areas. The stove was developed in collaboration with the Los Angeles and Pasadena, Calif., City and County Park Department engineers. It is light in weight, portable, yet ruggedly constructed, and for outdoor use it may be embedded in stone or concrete emplacements.

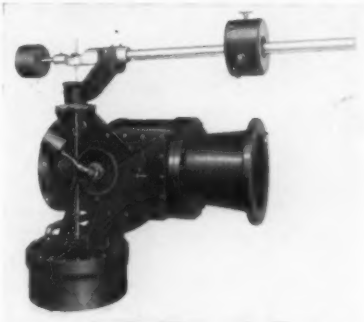
The Welcome Meter Coin-Box Electric Hotplate

Besides paying for itself and offering modern cooking facilities, the use of the hotplate eliminates the fire hazards and fuel and waste-disposal problems which always accompany the use of open fires. These electric hot plates with the coin meter are in use in Brookside Park, Pasadena; Griffith Park, Los Angeles; Sunset Pier, Santa Monica; and Crystal Lake, Los Angeles County, Calif.

American Public Works Association Convention Detroit, Mich., Sept. 30-Oct. 4, 1940

BUILDERS

IMPROVED METERING AND CONTROLLING EQUIPMENT



Type E Direct-Acting Controller features include: precise control; compact, yet flexible design; powerful "floating piston" actuation with unique rubber piston seal; low loss of head; elbow outlet or straight through design; single blade vane-type valve; generous use of corrosion-resisting materials; and the use of the basic Venturi Tube. **Bulletin 321.**

BUILDERS - PROVIDENCE
IRON FOUNDRY - RHODE ISLAND

TAKING CHANCES HAS NO PLACE IN ANY PUBLIC OFFICIAL'S CAREER—ESPECIALLY WHERE THE SAFETY OF VITAL RECORDS IS CONCERNED

OFFICIALS in every walk of public life are daily becoming more cognizant of the fact that "public records are a public trust." And as one City Executive recently said—"I buy Safe-Cabinet record protection for the same reason I have building and property insurance—just to make sure that *if* and *when* fire strikes, *everything* in my trust is fully covered. I simply won't take a chance on betraying my public trust."

There's no excuse for the destruction by fire of vital public records. Safe-Cabinet products, in a complete range, from Safe-Files and Safe-Ledger Trays to huge capacity Safe-Cabinets, will accord protection at the *point of use* for every public record. See for yourself, today, how easy and inexpensive it is to *stop taking chances* by according Safe-Cabinet protection to the records that are YOUR trust.

SAFE-CABINET DIVISION

Remington Rand Inc.

Buffalo, New York • Branches Everywhere

How important records were charred and burned beyond redemption in a short fire.

How a Safe-File protected its contents during a severe fire lasting several hours.

Here's the traffic Line Marker that will put down one or two traffic lines on asphalt, concrete, or brick as sharp as a razor edge. The Littleford Traf-O-Line is new, different, with one valve control. For easy, simple line marking, this is the unit you need.

LB LITTLEFORD

LITTLEFORD BROS.

500 E. Pearl St. Cincinnati, Ohio

HEIL UNITS CUT COSTS

HEIL HYDRAULIC "SL" DUMP UNIT

HEIL CONVEYOR SANITATION UNIT

Popular Heil Hoists, Bodies and Tanks are designed and built for heavy-duty service . . . Experienced Heil Transportation engineers are prepared to give you equipment exactly suited to your needs . . . Get Heil recommendations before you buy—Address:

THE HEIL CO.

MILWAUKEE, WISCONSIN

HILLSIDE, NEW JERSEY

HEIL STREAMLINE WATER TANK

HEIL STANDARD STREET FLUSHER

When you write for that catalog, kindly mention THE AMERICAN CITY.

The New Turco Windlass Truck

New Windlass Truck for Sewer Cleaning

The Turbine Sewer Machine Co., Inc., Milwaukee, Wis., has announced a new, inexpensively priced, strongly built windlass truck for handling sewer-cleaning equipment. This small two-wheeled truck has rubber-tired roller-bearing wheels with Alemite fittings. It is possible for one man to pull either a Turbine Type A Senior double-geared windlass or a Turbine Junior Type B windlass with cable very easily from one manhole to another. This does away with the necessity of tying up an automobile truck for moving the windlass. The new Turco windlass truck is well balanced, making it easy to pull, and greatly improves the mobility of skid type windlasses.

F-M Two-Stage Pumps for Higher Heads

A line of 2-stage split-case centrifugal pumps with capacities up to 550-gpm at heads ranging up to 600 feet has been announced by Fairbanks, Morse & Co., 600 South Michigan Avenue, Chicago, Ill., for head conditions above the range of single-stage pumps. These units are suited to all classes of general pumping service where the liquid is of low viscosity and free from foreign matter, such as for water supply to high buildings, small municipalities, for boiler feed, etc.

The one-piece impellers are made of cast iron, hard bronze, or other alloy, depending on requirements. They are mounted "back to back" on the shaft to assure proper hydraulic balance. Removable wearing rings with streamlined water guiding surfaces are provided on both the casing and impeller. The shaft, made of high manganese alloy steel, is journaled in ball bearings of ample size to withstand the thrust and radial loads. Centrifugally cast bronze shaft sleeves are mounted on the shaft to protect it against the abrasive or corrosive action of the liquid.

Horizontally divided bronze glands facilitate removal and adjustment of the packing. The stuffing-boxes are especially deep to accommodate an adequate supply of packing rings. A bronze water seal ring for clear water in the stuffing-box on the low-pressure stage prevents air from entering the pump chamber and reducing the efficiency. These pumps are described completely in Bulletin No. 5972, which will be sent free on request.

Horizontal Drilling for Water Services

Horizontal drills for drilling under paved streets for the installation of water services, and capable of drilling 4-inch holes up to 50 feet in length, are made by the Paris Mfg. Co., Paris, Ill. The manufacturer claims that direction control and alignment can be maintained accurately with both the Parmanco Junior and the Parmanco General Utility drills.

The Parmanco General Utility machine is powered by a 4-cylinder, 16-hp, air-cooled Wisconsin motor with the power transmitted from a disc clutch by a 1¼-inch heavy-duty flexible shaft from 2,000 rpm of the motor to 125 rpm of the auger shaft proper. The drilling speed is under manual control through an 18-inch hand wheel and a 15 to 1 worm and gear to a shipper shaft which drives the pinions on a cut steel rack. The machine is all electrically welded and has extra heavy-duty bearings. This machine is equipped with direction control augers from 4 to 8 inches in diameter.

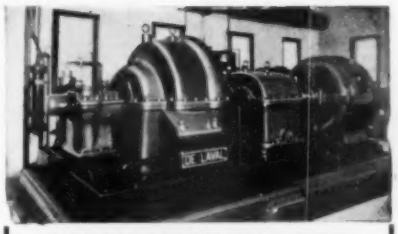
The Junior Model is powered with a 7-hp motor and may be placed in a hole 2½ x 6 feet in area, and the power plant kept on the surface, making it easy to drill a 4¼-inch hole for service connections beneath pavements. It is installed and operated by two men and weighs complete only 750 pounds.

Fun-House a Feature of AWWA Exhibits

To celebrate the culmination of its development program, Proportioneers, Inc., Providence, R. I., "went to town" in its exhibit at the AWWA convention in the Municipal Auditorium at Kansas City, Mo., from April 22 to 25. The Fun-House in true Coney Island style, was the come-on for an interesting exhibit of the aqua method of ammoniation, which cuts in half the annual chemical cost of ammonia for water treatment as well as reducing the first cost of ammoniators to one-third of the former price of gas ammoniators.

Inside the Fun-House was a continuous motion picture display of an ammoniation plant owned by the U. S. Government at Washington, in a water-treatment plant. At an 80-mgd water-treatment plant Proportioneers reports a saving of $100 a month on ammonia alone by using the Amm-O-Feeder with aqua ammonia.

New England Water Works Association Convention, New York City, September 24-27, 1940



COMPRESSED AIR
for Sewage Disposal

A DE LAVAL centrifugal compressor is a most simple, reliable and economical means for supplying compressed air in the volumes and at the pressures required in sewage disposal plants. There are no valves or rubbing surfaces, except the bearings, and no unbalanced parts to cause vibration or to require heavy foundations. By using De Laval helical speeding-up gears, a simple, high-speed compressor can be driven from an internal combustion engine or a standard speed electric motor. The two-stage compressor here shown, designed to deliver 13,500 cu. ft. per min. to an activated sludge plant against 6 lb. pressure, runs at 3600 r.p.m., while the standard speed motor turns at 1200 r.p.m.

State your requirements and ask for Catalog F-4081

DE LAVAL
STEAM TURBINE COMPANY
TRENTON, NEW JERSEY

World's only pump
embodying HYPOCYCLOIDAL MOTION — in deep wells

In the new Peerless Hi-Lift Pump there's a different principle of water lifting. It's simplest, surer; requiring a much slower shaft speed. The pumping element is unique. A spiraled chrome rotor rolls within a resilient stator bearing with a continuous hypocycloidal motion. Cheapest water. 4" wells or larger. 300 to 5000 g.p.h. Request Bulletin.

(R. Moineau Patents)

PEERLESS PUMP DIVISION
FOOD MACHINERY CORP.
Factories at Los Angeles, San Jose, Fresno, Calif., and Massillon, Ohio.

PEERLESS HI-LIFT

Quality Trucks *with Truck Qualities*

CHEVROLET

Two things are demanded of a motor truck by wise buyers.

They demand quality trucks—*trucks made of high-grade materials, properly engineered, to insure long life and dependability.*

They demand truck qualities—*smooth, dependable power from a heavy-duty truck engine . . . strength to stand continuous operation at full capacity . . . fuel and oil economy that lasts the life of the truck.*

Chevrolet trucks give these two things in full measure—every desirable truck quality is built into them and safeguarded for the life of the truck by highest-quality materials. For Chevrolet trucks are all-truck—in design, and in every unit . . . from special *truck* engines through every unit of the chassis.

That's the way Chevrolet trucks have been built through the years . . . and that's why they have won and held first place in the industry.

CHEVROLET MOTOR DIVISION, *General Motors Sales Corporation*, DETROIT, MICHIGAN

CHEVROLET TRUCKS

George C. McNutt

McNutt Returns to R. G. LeTourneau, Inc.

George C. McNutt, who has been associated with the Bert S. Gittins Advertising Agency as Account Executive on Allis-Chalmers, Bucyrus-Erie and other industrial accounts, has returned to his former position as Advertising Manager of R. G. LeTourneau, Inc., Peoria, Ill., and Stockton, Calif. Mr. McNutt is well known for his earlier work as a free-lance writer and newspaper man even before entering the industrial advertising field with the West Coast Division of the Caterpillar Tractor Co., and later the American Tractor Equipment Co. In 1935 he accepted the position of Advertising Manager for LeTourneau, which he held until 1937, when he joined the Bert S. Gittins Advertising Agency in Milwaukee, Wis. He is well known throughout the industry and the advertising field. Since the inception of the Construction Equipment Advertisers in 1939, he has served as Secretary-Treasurer.

New Boring Machine for Service Pipes

A power boring machine which can be used for installing casings or pipes up to 36 inches in diameter for water and gas lines or for sewers under highways and railroads has been announced by the Young Engine Corporation, Canton, Ohio. The machine is a horizontal rotary drill using the pipe or casing to be installed as a medium for carrying the rotating cutter head. The driving sleeve is hollow to permit the removal of dirt through the pipe.

The machine for operation is placed in the ditch with a 20- or 30-hp gasoline power unit set up on the bank at the side. The casing to be installed is attached to the driving head of the machine, which is an 8 x 13½-inch forged steel flange on the forward end of a rotating hollow sleeve. The combined rotating and forward thrust of the sleeve forces the pipe with the cutter head into the embankment. After the hollow driving sleeve has been advanced to its full extent, it is unflanged from the casing and returned to its starting position. Then an 8-inch x 6-foot flanged extension joint is inserted between the rear end of the pipe and the driving sleeve. This operation is repeated until the total length of the inserted extension joint exceeds that of the next joint casing. All the extension joints are then removed, and the next section of pipe is welded or screwed to the preceding one and the cycle of operations is repeated.

Copies of Bulletins C-15-E describing in full detail the Young Boring Machine and its uses, may be secured by those interested direct from the manufacturer, by mentioning this item.

New Patching Roller Has Many Uses

A miniature tandem roller which was developed originally for rolling tennis courts at the University of Minnesota has been rapidly accepted by municipal street departments and many contractors for patching as well as for rolling driveways, parking lots and filling stations, or bituminous surfacing. The Toro power roller, made by Toro Manufacturing Corporation, Minneapolis, Minn., weighs 1,327 pounds gross when the 14¾-gallon water tank is filled, and the machine is driven by an average operator. The roller is powered with a Toro 3-hp. air-cooled, 4-cycle motor with an automatic built-in governor and a ocunter-balanced ball-bearing crankshaft. It has a forward and reverse transmission with ample speed range both ways. The wheel base between the axle centers is only 27¾ inches, making it possible to get the roller in and out of small garages.

STOP RUST

in your steel water tanks and filter beds with

RUSTA RESTOR TRADE MARK REGISTERED

PATENTED PATS. PEND.

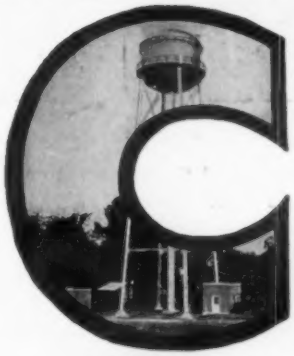
method of Cathodic Protection

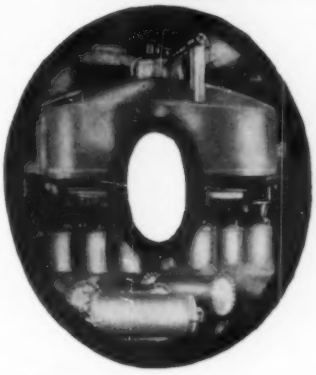
—the only known means of positive prevention

MANY ordered their *first* RUSTA RESTOR unit ON APPROVAL. YOU can do the same. We have a number of letters from satisfied users. Would you like to see them? WRITE:—

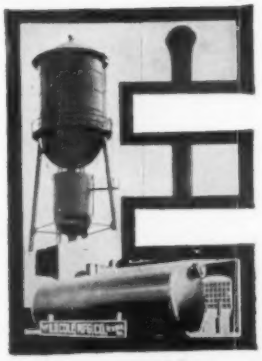
RUSTA RESTOR CORPORATION
1450 W. State St., Fremont, O.

Tank Builders For Over 80 Years!





Tanks, Towers, Kettles, Kiers, Vats, Vessels, Bins, Boilers, Stacks, Standpipes and other fabricated plate-work from your specifications or ours.



Write for "Tank Talk" — 6-A, or let us figure on your requirements.

R.D.COLE MFG.CO.
Established in 1854
NEWNAN · · · GEORGIA

Too Tough?

NOT FOR A FORD TRUCK!

● When the going gets really tough, put a Ford Truck on the job and watch it perform. These big, rugged units are built to take hard work — and like it! They're trucks, every inch of them, with big, massive frames, axles, springs, brakes.

Power? Smooth, dependable, eight-cylinder power with a choice of three efficient truck engines — 95, 85 and 60 hp.

And economy! From the Model T to today's giants, the Ford Truck has showed the way to real dollar-saving performance. It gets to the place it's going in a hurry and is back for more payload and more trips per day.

From the toughest to the smallest hauling and delivery job there's a Ford Truck to give you this kind of economy. There are six wheelbases, forty-two body and chassis types, and a wide choice of special equipment, including optional axles, transmissions and larger tires.

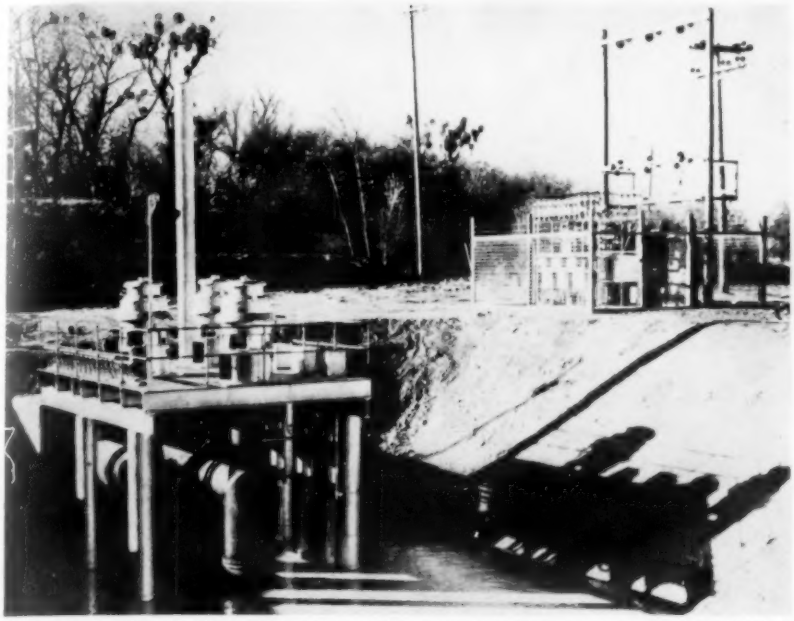
Watch a Ford Truck go to work on your job! Make an actual "on-the-job" test — with your own driver and loads over your own routes. Know the difference Ford quality and economy make before you spend another truck dollar.

VISIT THE NEW FORD EXPOSITIONS AT THE TWO FAIRS, NEW YORK AND SAN FRANCISCO, 1940

● Ford Motor Company, Builders of Ford V-8 and Mercury Cars, Ford Trucks, Commercial Cars, Station Wagons and Transit Buses.

Ford

FORD V·8 TRUCKS



The New Outdoor Drainage Pumping Station and Substation for Reclamation District No. 1000, Near Los Angeles

New Drainage Pumps for California District

The new drainage plant in Reclamation District No. 1000 near Los Angeles, Calif., has proved its ability to handle flood waters that in past years have occurred in excess of the capacity of the drainage facilities throughout the upper part of the district.

This new plant, put in operation shortly after the first of the year, is a radical departure from the usual plants for this service. It consists of a reinforced concrete structure setting in the end of the drainage canal and carries three Pomona vertical drainage pumps, driven by three 200-hp, 490-rpm General Electric vertical motors. The control equipment for the motors is installed at the sub-station adjacent to the plant. Both the motors and the control are of weatherproof construction and require no additional protection from the weather.

The pumps discharge through automatic valves especially designed so that in closing, the effects of shock and water hammer are greatly decreased. The water is carried from the pump structure through a single discharge pipe under the levee and into the nearby river. The entire structure is so designed as to permit gravity outfall at low river stages.

News from Cochrane

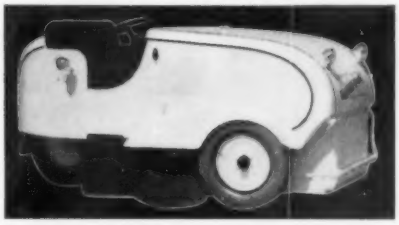
Cochrane Corporation, 17th Street and Allegheny Avenue, Philadelphia, Pa., has announced the appointment of Charles M. Chapman as its flow meters representative in the Cincinnati territory, covering parts of Ohio, Indiana and Kentucky. He will be located in Room 715 Schmidt Building, Cincinnati, Ohio.

Bulletin 2950 has just been released by Cochrane describing its baffle-type moisture and oil separators for use in vertical or horizontal steam, gas and air lines. It contains cross-section photographs and line drawings of the three popular types of line separators built for use on lines ranging from ½ to 30 inches in diameter. Copies will be sent free on request.

SYNTRON
"GRAVIMETRIC"
FEEDER MACHINES
for Accurate
Dependable
Dry Chemical Dosage
by Weight

SYNTRON
"VOLUMETRIC"
FEEDER MACHINES
for Automatic
Dry Chemical Dosage
from Flow Meter or
pH Indicator Control
SYNTRON COMPANY
430 LEXINGTON AVE., HOMER CITY, PA.

South Bend
GUTTER-SNIPE
PICKUP STREET SWEEPERS



SWEEPS 5' 6" WIDE
FULL HYDRAULIC CONTROLS
REAR WHEEL STEER

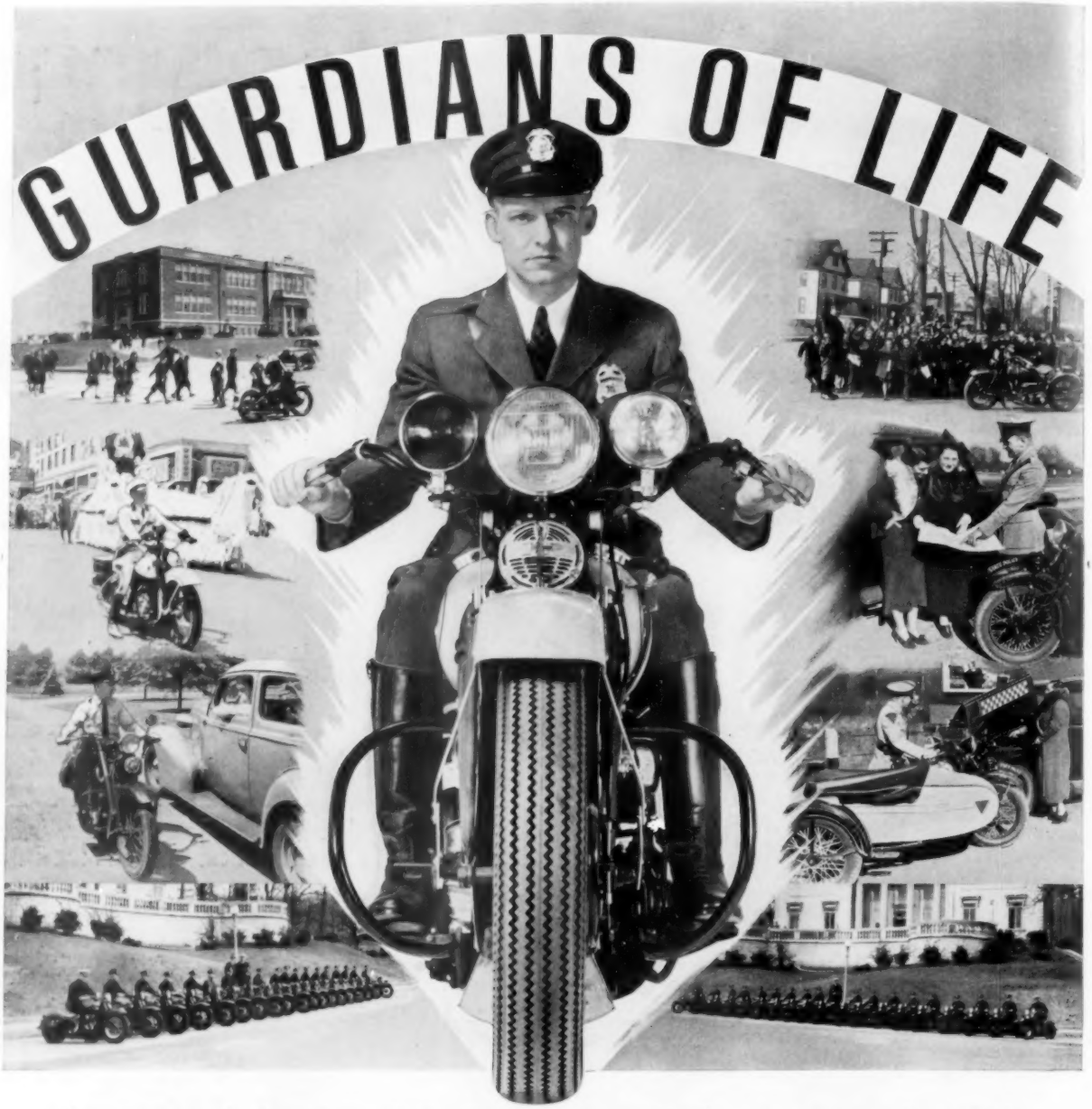
South Bend
STREET FLUSHERS

SIZES 600 TO 3000 GALLONS CAPACITY
FOR TRUCK OR TRAILER MOUNTING
STREAMLINE AND CONVENTIONAL
CLEANS FULL WIDTH STREET.

South Bend
BITUMINOUS MATERIAL
DISTRIBUTORS

SIZES 500 TO 2100 GALLONS CAPACITY
FOR TRUCK OR TRAILER MOUNTING
DISTRIBUTES ANY MATERIAL AT ANY
TEMPERATURE, IN ANY QUANTITY
NO-DRIP OR CIRCULATING SPRAY BARS.

Write for Catalogs
MUNICIPAL SUPPLY COMPANY
SOUTH BEND, INDIANA
Manufacturers of
Street Cleaning and Road Building Equipment



Always on guard where danger lurks. Even little children know the motorcycle officers as their friends. And grownups, whether on foot or at the wheels of their cars, look to the motorcycle officer for protection and safety. Their very presence curbs dangerous driving practices which lead to tragedy — accidents and often fatalities.

Motorcycle officers are true guardians of life. Their alertness and efficiency earn for police departments the esteem of the public. It is noteworthy that more than 3500 U. S. communities have equipped their motorcycle officers with dependable Harley-Davidson Police Motorcycles. Have your dealer bring over a 1940 model for your inspection.

HARLEY-DAVIDSON MOTOR COMPANY, Milwaukee, Wisconsin

HARLEY-DAVIDSON

THE POLICE MOTORCYCLE

The New Eclipse Rolloway Power Lawn Mower

Power Lawn Mowers for Large Areas

The Eclipse Lawn Mower Co., Prophetstown, Ill., recently announced the introduction of the new Rolloway power lawn mower of 25-inch cutting width. This machine features the differential action, pivot turning on over-size pneumatic tires, and is a walking-type mower.

The performance features and specifications include the model IHR 4-cycle Briggs & Stratton motor with 6 to 1 gear reduction, and throttle control with automatic governor. The automotive-type differential has six steel cut gears in oil. The Goodyear pneumatic caster wheel is 10 x 3-inch. The traction wheels are equipped with Goodyear 14 x 4-inch pneumatic tires. The extra-heavy Timken-bearing reel has five blades, is 6 inches in diameter and has a 1-inch shaft with double riveted spiders. Diamond chain and hardened sprocket drive.

The operating speed is from 1 to 4 miles per hour, and acreage from 3 to 5 per day, and the net weight is 230 pounds.

New Small Distributors for Sewage Filters

A new sprinkler for a sewage-treatment plant in small communities or large institutions for applying settled sewage to a trickling filter has been announced by Yeomans Brothers Co., 1433 North Dayton Street, Chicago, Ill. This Simplette sprinkler consists of a rotating distributing arm of channel sections supported at the center by a square tubular beam through which the sewage flows from the water wheel which actuates the unit, and is delivered into the sprinkler trough. Actual distribution over the filter media is by means of a series of notches spaced properly for even distribution.

The Simplette sprinkler may be used either with a septic tank or with a primary settling tank with equal effectiveness on open or covered filters. The speed of rotation of the sprinkler trough is automatically controlled to maintain correct distribution under all flow conditions. The frequent cleaning of clogged spray nozzles is eliminated by the use of the notches in the sprinkler trough. It is reported that practically any handyman can erect this sprinkler, because of its simple construction, and also that the elimination of the central well makes it possible to use smaller-diameter filters for equally effective service.

The Simplette sprinkler is described and illustrated in detail in temporary Bulletin 6550 issued by Yeomans Brothers Co. Copies will be sent free on request to those mentioning this item.

Drake Joins Alco

Alan D. Drake has recently joined the Alco Products Division of the American Locomotive Co., 30 Church Street, New York, specializing in steel pipe for water supply and sewage disposal, and other fabricated steel products. C. S. Patton is Manager of Sales for Alco Products.

N. Y. State Sewage Works Association Meeting, Syracuse, N. Y., June 20-22, 1940

OSGOOD

POWER SHOVELS
DRAGLINES
CRANES
TRUCK SHOVELS, Etc.
3/8 to 2 1/2 Cu. Yds.
HERCULES ROAD ROLLERS

Write for New Catalogs

THE OSGOOD CO.
MARION OHIO

MARK STREETS the Safe M-B Way!

Center line marked the M-B way. Note how it follows the true curve of the highway.

Safety at Curves

Here's a traffic line marker that's equally effective for marking center-lines at curves.

The M-B marker handles ANY type of street or highway striping job, even around curves. In addition, it can be used for marking parking areas, athletic fields, airports, tennis courts, etc. With paint sprayer attachment it can be used for painting machinery, park benches and other municipal equipment. Saves time and money.

Two types available—hand-propelled or power-driven models. Easy, one-man control. Practically no upkeep. Write for literature.

MEILI-BLUMBERG CORP., Box A-5, New Holstein, Wis.

MEILI-BLUMBERG

A3056-1/3

ANOTHER REASON WHY BRICK COSTS LESS PER YEAR OF SERVICE

● Another winter—a hard one in most localities.

Look at your roads and streets—compare the way brick has come through with other types, no scaling from ice-melting salts, alkalies or chemicals. One more important reason why brick costs less per year of service. You can use any of these ice-removal materials without damage to brick.

Nor is there damage to brick where these melting materials have been used as an admixture with sand or cinder stock piles.

And, of course, brick best withstands the concentrated chain-shod traffic in snow-rutted roads or streets. The experience records of hundreds of cities and other road building units and many accelerated tests have definitely established that point.

The cost of upkeep on brick pavements is always low, ranging from negligible to nil.

Brick resists damage from weather, traffic and ice-removal material, and thereby gives smooth, safe passage to any type of traffic at the lowest cost per year of service. National Paving Brick Association, National Press Building, Washington, D. C.

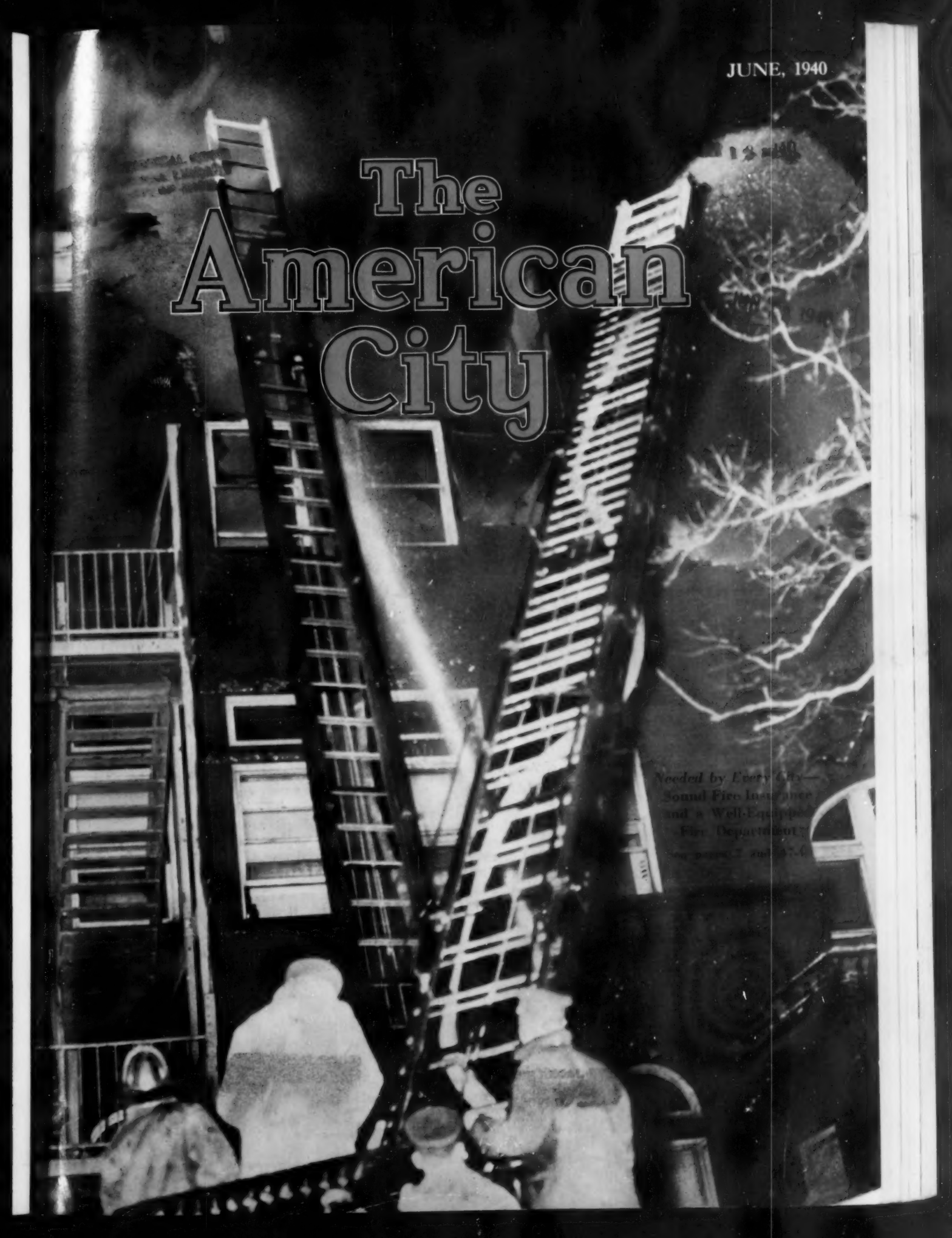
BRICK

FOR NEW CONSTRUCTION AND RESURFACE WORK

Do you mention THE AMERICAN CITY? Please do.

JUNE, 1940

The American City



Needed by Every City—
Sound Fire Insurance
and a Well-Equipped
Fire Department
see page 2 and 3-4